



DCCAE

Single Bidder Solution Assessment Final Report

KPMG

December 2018

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Single Bidder Solution Assessment Report
December 2018

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There will usually be differences between forecast or projected and actual results, because events and circumstances frequently do not occur as expected or predicted, and those differences may be material.

Glossary

Term	Definition
ACMP	Additional Connection Milestone Payments
AWS	Advanced Wireless Services
CIL	Change in Law
ComReg	Commission for Communications Regulation
Connection Milestone Payment/CMP	The subsidies payable to NBPco on achievement of connection payment milestones
Contract Assumption	Refers to the risk share arrangements described in sections 5 and 7
Contract Period	The duration of the NBP contract between the Minister and NBPco
CPPP	Cost per Premise Passed
CSO	Central Statistics Office
DCCAE / Department	Department of Communications, Climate Action and Environment
Deployment Area	Geographic areas of at least 1,000 premises which together make up the Intervention Area
Deployment Milestone Payment/DMP	The subsidies payable to NBPco on achievement of deployment payment milestones
DPER	Department of Public Expenditure and Reform
ESRI	The Economic and Social Research Institute in Ireland
Extension Area	The c. 300,000 premises removed from the Intervention Area by the Department in April 2017 as a result of eir committing to extend its high speed broadband network on a commercial basis to these premises
FTE	Full time equivalent
FTTH	Fibre to the Home
FTTP	Fibre to the Premises
Gbit	Gigabit
GENC	The former consortium name for GMC
GMC	The sole remaining bidder in the NBP procurement process, being the consortium led by Granahan McCourt Dublin (Ireland) Limited
GPON	Gigabit passive optical networks
HR	Human resources
Infrastructure Access Agreement / IAA	Means an agreement with an infrastructure access provider for the provision and making available by the infrastructure

Term	Definition
	access provider of any one or more third party infrastructure products and/or services for NBPco.
Intervention Area/IA	The premises which NBPco must deploy the Network to in accordance with the contract
Intervention Strategy	Means 'Ireland's Broadband Intervention Strategy' published by DCCAE in December 2015
IRR	Internal rate of return
ISDS	Invitation to submit detailed solutions
ISFT	Invitation to submit final tenders
KPI	Key performance indicators
LLP	Limited liability partnership
MAN	Metropolitan area network owned by the State and managed as a concession by eNet
M1 Milestone	Milestone payment payable to NBPco after completion of the detailed design stage for a Deployment Area
M2 Milestone	Milestone payment payable to NBPco after partial completion of deployment to a Deployment Area
M3 Milestone	Milestone payment payable to NBPco after full completion of deployment to a Deployment Area
Minister	Minister of Department of Communications, Climate Action and Environment
Minister's Appointee	A non-executive director appointed to the Board of NBPco by the Minister
MIP	The major infrastructure project established by Openeir in respect of NBPco's pole replacement and sub duct access requirements
Network	All of the passive and active electronic communications network procured, designed, built, deployed, leased, interconnected, connected, enabled, operated, used and/or maintained by NBPco
NBP	National Broadband Plan
NBPco	National Broadband Plan Company
NBS	DCCAE's 2008 National Broadband Scheme (awarded to Three in December 2008, expiry August 2014) to deliver basic, affordable broadband to targeted areas across Ireland
NGA	Next Generation Access
NOC	Network Operations Centre
NPV	Net Present Value
O&M	Operations and Maintenance

Term	Definition
Ongoing Capital Payment/OCP	Deferred deployment payments paid over the first 10 years of the Contract linked to performance requirements for the early stages of operations
OH	Overhead
OJEU	Official Journal of the European Union
OLT	Optical Line Termination
OSS/BSS	Operations support system/business support system
Permitted Expenditure	Expenditure incurred by NBPco in the implementation of the Network that is eligible for gap funding
Project Cost Model/PCM	PCM refers to the Project Cost Model, as developed and submitted by the Bidder as part of their final tender, which contains the Bidder's detailed cost projections as relevant to the NBP
Project Financial Model/PFM	PFM refers to the Project Financial Model, as developed and submitted by the Bidder as part of their Final Tender, which contains the Bidder's revenue (including subsidy payments) and cost projections as relevant to the NBP
PPP	Public private partnership
PQQ	Pre-qualification questionnaire
Public Spending Code	Department of Public Expenditure and Reform (DPER) guidelines which applies to both capital and current expenditure. The Code sets out to explain what is required of public service managers at different points of the expenditure lifecycle and offers advice on how to fulfil those requirements
RDS	Refined detailed solutions
RSP	Retail service provider
SAG	the European Commission (EC) State Aid Guidelines for the application of State Aid rules in relation to the rapid deployment of broadband networks (2013/C 25/01) published on 26 January 2013
SAM	Solution assessment methodology
SCP	Strategic Community Point
Siro	A joint venture between ESB and Vodafone
SLAs	Service level agreements between a retail or wholesale service provider and NBPco
SMP	Significant market power
SPV	Special purpose vehicle

Term	Definition
Strategic Community Point	Specified public buildings & facilities to which NBPco is required to prioritise deployment to in accordance with the NBP contract
Termination Events	A series of pre-defined events which on occurrence will terminate the NBP contract
Terminal Value	The value of ownership of NBPco for the periods after the expiry of the NBPco contract, as bid by the Bidder in the Project Financial Model
Termination Liability	A capped amount payable by NBPco to the Minister in certain termination scenarios as set out in Table 4.16
UG	Underground
UK	United Kingdom
VAT	Value added tax
VFM	Value for money
VUA	Virtual unbundled access

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1 Executive Summary

1.1 Context

The NBP Project is a unique project in Ireland, in terms of ambition, scale and complexity. It is a project for the deployment of high speed broadband services to circa 536,000 of the hardest to reach premises in Ireland within a seven year period. The intention of Government is that it will deliver its commitment that 100% of premises (i.e. every citizen and business), regardless of location, will have access to high speed broadband at prices that are affordable and in line with the rest of the country.

In accordance with the Government's commitment, the intention is that the project will be delivered in a single intervention (one deployment programme) i.e. no one should be left unserved.

The scale of the commitment required from Government and a private sector partner is significant in the commercial broadband market in Ireland. While the objective of 100% coverage has been set in other countries, progress has been slow to deliver to this objective internationally.

The contract underlying the NBP project provides for the counterparty to commit to:

- Deploy high speed broadband services to 100% of the 536,000 premises in the Intervention Area, which includes the hardest to reach premises in Ireland;
- Complete the deployment in a single programme, planned over 7 years;
- Achieve specified Milestones Dates for completion of deployment to Strategic Community Points and Deployment Areas (each circa 5,000 premises), or otherwise suffer reductions in public subsidy;
- Achieve levels of service that are in line with market benchmarks, or otherwise suffer reductions in public subsidy in addition to the remedies that apply in the normal commercial market (i.e. lost customers); and
- Deliver these commitments for a public subsidy which is set at a maximum level under the contract. The Bidder had to bid the subsidy it requires in its Final Tender, which is before it has completed its surveys and low level designs for the deployment (the Bidder therefore needs to mitigate this risk).

Delivering on the above requirements will involve any entity taking on a significant level of risk. To deliver this commitment and to mitigate and manage the risk of failure, it is important that the Project's financial projections and contract terms take account of the high level of risk associated with the deployment of this broadband network, including deployment cost and timescale risks, connection cost risks, reliance on third party infrastructure, technology risk, customer take-up risk and price inflation risk.

The Government's assessment of the financial, social and economic importance of this Project is such that it wants to mitigate the risk of the Project failing once a contract has been signed. It is important for Government that the entity taking on this project can

deliver the Government's commitment to high speed broadband for every citizen and business in Ireland, and to secure the provision of those services for a period of at least 25 years.

Accordingly, having regard to the Government's primary objective, the key objective of the NBP procurement process is not to secure simply the lowest price, rather it is to secure appropriate quality and certainty of delivery.

It is should be noted that all of our comments that follow on the contract are based on the important assumption that the contract as drafted achieves its intended legal effect which is outside of our scope but rather a matter for the Department's legal advisers.

1.2 Procurement Process

The NBP contract that is the subject of this procurement has been designated as a "service concession" as defined in the Public Procurement Directive¹. This means normal Public Procurement legislation does not apply to this procurement². Nevertheless, the competitive dialogue procedure is being followed as best practice for the purposes of this procurement.

Prior to commencing the procurement, the project was subject to detailed appraisal in 2015 which involved the preparation of the following reports:

- A draft Broadband Strategy for Ireland ("Intervention Strategy"), Cost Benefit Analysis and State Aid report by PwC;
- An ownership report, financial appraisal, funding report, and governance report by KPMG; and
- A technical report by Analysys Mason.

The subject matter and conclusions of these reports are not being addressed again in this report.

In July 2015, the Government received an estimate of the project's subsidy requirement and approved the publication of the draft Intervention Strategy. The updated Intervention Strategy was published in December 2015 following public consultation on the earlier draft.

The commencement of the procurement was approved by Government in December 2015 and there has been four stages to the competitive dialogue process:

- Stage 1: pre-qualification to select a short list of three Bidders. It was at this short listing stage that the Government selected its preferred ownership model (commercial stimulus / gap funding) for the state-led intervention;

¹ Public Procurement Directive 2004/18/EC and the European Communities (Award of Public Authorities' Contracts) Regulations 2006

² Article 17 of that directive and Regulation 14 of those regulations

- Stage 2: dialogue with Bidders followed by the submission of detailed solutions;
- Stage 3: further dialogue with the remaining Bidder followed by submission of a refined detailed solution (as described below, two Bidders dropped out of the procurement process leaving one Bidder to submit its refined detailed solution);
- Stage 4: final dialogue with the remaining Bidder, followed by the formal closing of dialogue and the submission of the final tender.

The key events and dates in the NBP procurement process are summarised in section 2 of the report.

In advance of the submission of detailed solutions in September 2017, the Department concluded its preparation of a new budget model for the NBP intervention, based on the updated intervention map (circa 542,000 premises³) published in April 2017. This budget model projected the subsidy payments for the project to be €787 million in total nominal terms⁴ at that time.

In their detailed solution submissions, both of the Bidders that remained in the procurement at that time (eir and GENC) projected significantly higher levels of subsidy than the budget model. Following a detailed review of the forecast costs and an evaluation of the two Bidders' cost and financial models and underlying technical and commercial solutions, the Department formed the view that the subsidy payments required by Bidders at Final Tender stage were very likely to be higher than the September 2017 budget model. As such, and following consultation with the Department of Finance, Department of the Taoiseach and the Department of Public Expenditure and Reform, the Department made the decision to reappraise the Project in accordance with the Public Spending Code.

The project re-appraisal process was finalised in May 2018. This included the preparation of a new budget model for the Project, reflecting the Department's updated forecasts of the costs and revenues associated with the Project and the level of public subsidy that was likely to be required. The updated budget model forecast total nominal subsidy payments of €1,814 million excluding VAT and contingency (or €2,176 million excluding VAT but including contingency). The Cost Benefit Analysis for the Project was also revisited⁵ as part of the re-appraisal process, estimating a Benefit to Cost ratio of 1.68 based on the new budget model.

In May 2018 it was decided at a Government level that the procurement process should continue as planned. As the Government level decision was to continue the procurement process, the latest May 2018 budget model has been taken to be the "Approval in Principle"⁶ comparator for the purposes of the assessment of the final tender for the NBP contract, in accordance with the Public Spending Code. This nevertheless remains subject to there being a Government decision on the overall budget for the Project.

³ Subsequently updated to 536,000 premises in early 2018, which was the basis for the Final Tender.

⁴ Nominal prices include inflation. Real prices exclude inflation.

⁵ Cost Benefit Analysis update by PwC, August 2018

⁶ As defined in the Public Spending Code

The Department has recently revisited the Cost Benefit Analysis⁷ for the Project to take account of the more recent information relating to costs and deployment timescales. This updated cost benefit analysis from PwC estimates, based on its central scenario, a positive real NPV of over €1.7bn over a 25 year period, with a Benefit to Cost ratio of 1.42. A sensitivity was also run by PwC based on the Bidders final tender solution which estimates a positive real NPV of over €1.14bn over a 25 year period, with a Benefit to Cost ratio of 1.24.

1.3 Purpose of this Report

In light of that fact that two Bidders withdrew from the procurement process before final tender, it has obviously not been possible to compare the final tender received to any competing bid. This has meant that additional detailed analysis is required to inform the Department's consideration of whether the final tender submitted by the remaining Bidder is an acceptable outcome for Government, by reference to the Public Spending Code.

This Single Bidder Solution Assessment Report has been prepared by KPMG to inform the Department's assessment of whether it considers the final tender (i.e. solution) submitted by the Bidder to be an acceptable outcome for Government, by reference to the Public Spending Code.

The Public Spending Code requires a number of questions to be considered by the Department at the final tender stage, which we have summarised as follows:

- Do the costs and outputs of Final Tender match the costs and benefits that led to the "Approval in Principle"⁸?
- If the Final Tender exceeds the "approved budget", can reductions in costs / subsidy be achieved without lowering the quality of the solution below acceptable levels, in order to bring the project within the "approved limit"?; and
- If the Final Tender is materially above the "approved limit":
 - Is a revised Cost Benefit Analysis required?; and/or
 - Is a further Project Re-appraisal required (for approval of a raised financial limit)?

This Report is intended to inform the Department's consideration of the comparisons and questions set out in the Public Spending Code, as described above. The Report also considers how costs / subsidy and outputs / benefits are intended to be managed during the life of the Project, in accordance with the terms of the NBP contract. This is intended to inform the Department's consideration of Public Spending Code requirements at the management stage, in particular:

⁷ Cost Benefit Analysis update by PwC, October 2018

⁸ As stated in section 1.2, the latest May 2018 budget model has been taken to be the "Approval in Principle" comparator for the purposes of the assessment of the final tender for the NBP contract, in accordance with the Public Spending Code.

- Assigned responsibility for delivery;
- Appropriate structures for monitoring and management;
- Means of measuring if on target with expectations; and
- Means of managing adverse developments or changes in circumstances.

This Single Bidder Solution Assessment Report is not a value for money assessment of the final tender submitted by the remaining Bidder. In respect of a gap funding contract of this nature, value for money can only be assessed with certainty at the end of the contract period, when the final outturn costs and benefits, net of actual clawback, are known.

This Single Bidder Solution Assessment Report is also separate to the evaluation of the final tender, which has been undertaken by the Department in accordance with the Evaluation Methodology. The Evaluation Methodology sets out the methodology and award criteria that the Department will apply to identify the most economically advantageous tender that is capable of satisfying the Department's requirements, as set out in the ISFT. The final tender received has been the subject of a separate technical, commercial and contractual assessment in line with the Evaluation Methodology and the findings of the evaluation are dealt with in the Final ISFT Evaluation Report. However it is relevant to note that the overall findings of the various evaluation teams (including DCCAE, Analysys Mason and KPMG) were that the final tender is capable of satisfying the Departments requirements as set out in the ISFT.

1.4 Technical Solution

The technical solution proposed by the Bidder is a fibre to the premises (FTTP) network, designed to deliver 100% fibre from the exchange to each of the premises in the Intervention Area over the seven year deployment period. The contract allows for up to 2% of premises to be served by a wireless solution and for additional premises (i.e. more than the 2%) to be passed using alternative solutions once approval is granted by the Department on a case by case basis.

NBPco's fibre network will comprise a 'pass network' and a 'connect network'.

The pass network is the part of the new fibre network that lies between the point of inter-connection to a Retail Service Provider's network (using NBPco's Wholesale Products) and a distribution point (inclusive) that is sufficiently close to end user premises, such that NGA broadband services can be provisioned within the service provisioning targets in the NBP contract at the standard connection charge.

The connect network is that part of the network that connects the distribution point to the end user premises, and is deployed after the end user orders a connection. The connection involves extending the 'passed' network by laying fibre cable from the distribution point to a modem point located in the premises.

A key requirement of the state-led intervention is that the entity responsible for establishing and operating the wholesale broadband network should be a separate

legal entity ("NBPco"), which will be subject to contractual arrangements that provide transparency and assurance in respect of its use of public subsidy and the delivery of the state-led intervention throughout the contract term.

The Bidder's solution involves NBPco contracting with a pool of experienced telecoms contractors for the design, build and operation of the broadband network. The Bidder's final tender states that NBPco will utilise existing physical infrastructure where possible to build the fibre network (pass and connect). The fibre will be predominately installed as aerial fibre on poles, however underground ducts will also be used wherever available. According to the final tender, NBPco will use standard industry practice (e.g. surveying, design, install techniques, tree trimming, testing etc.) to deploy the network.

The main source of the existing infrastructure will be eir poles and eir duct, with enet duct (in the Metropolitan Area Network) also used where available. During the deployment it is possible that a small number of premises may be unreachable using a fibre cable due to, for example, private property wayleave issues or exorbitant construction costs. In these limited cases, as stated above, the contract has provisions to permit those premises to be serviced using an appropriate wireless technology, subject to approval by the Department.

Deployment of the network is dependent on the availability of access to Openeir infrastructure (ducts and poles) and enet infrastructure (ducts). The Bidder's final tender states that NBPco will have infrastructure access agreements with both Openeir and enet in respect of back-haul, poles, duct-capacity and co-locations services to support the NBPco network. The infrastructure access agreement with Openeir is proposed to include a Major Infrastructure Project (MIP), which make provision for Openeir to make ready the routes identified by NBPco in its detailed design for a given Deployment Area (i.e. to repair any Openeir poles or ducts on the routes).



NBPco's ability to complete the network deployment within this 7 year period is therefore dependent on the timely completion of the MIP by Openeir.

The Bidder's final tender states that NBPco will also build a wireless network to connect strategic community points ahead of the fibre network reaching those locations. This wireless network could enable local authorities to establish digital hubs, providing access to high speed broadband services to residents and businesses while the full fibre network is being built. The strategic community points were selected by the local authorities and are public buildings such as community centres, buildings, schools etc.

Analysys Mason has confirmed that the active technology proposed by the Bidder is a higher specification than that required by the Department in the NBP contract⁹. According to Analysys Mason this specification provides a next generation technology solution that offers four times the download bandwidth and eight times the upload bandwidth of the technology assumed by the Department's Budget Cost Model.

Analysys Mason¹⁰ has reviewed the active technology proposed by the Bidder and anticipates that, based on industry trends and competition between operators, next generation technologies (such as that assumed by the Bidder) will be deployed within the next five years by commercial operators in Ireland, coinciding with the final years of the NBP deployment. Analysys Mason has estimated the overall cost premium for introducing this next generation technology of active equipment from the start of the NBP deployment (as opposed to at the first refresh point, circa seven years after the initial deployment in line with other operators) is an increase in capital costs of circa [REDACTED] over the life of the contract, with such percentage difference likely to reduce as the costs of the next generation technology will continue to fall.

Analysys Mason¹¹ has reviewed the Bidder's proposed technology and FTTH network design and has concluded that the Bidder's solution is in line with international best practice. Analysys Mason also concludes that, considering the requirements of the NBP contract, the future demand, other operators' strategies, and the relatively low-cost premium linked with the introduction of the higher capacity technology at the outset of the contract, Analysys Mason believes that the technology proposed by the Bidder can be considered as a value for money technology in the context of the NBP.

1.5 Financial Solution

Public subsidy is to be invested in the Project in accordance with the commercial stimulus model, otherwise known as "gap funding". This means that the subsidy paid to NBPco should be no greater than the amount of the capital related investment costs and NBPco establishment costs¹² that cannot be financed by the Project itself on a normal commercial basis (i.e. subsidy should only be used to fund the gap between the commercially viable investment level, which is to be funded by NBPco, and the total investment required). This is calculated by forecasting the capital expenditure, financing costs, operating costs and commercial revenues of the Project over a 25 year contract period, and then calculating the amount of capital investment¹³ that needs to be funded by Government in order for the private sector partner to achieve a commercial rate of return on the remaining capital investment that it finances.

The subsidy available from Government is in three main parts:

⁹ The Bidder has proposed a 150 Mbps product as its main product. This is well in excess of the Department's minimum requirement of 30 Mbps (download speed).

¹⁰ XGS PON VfM Analysis, November 2018, Analysys Mason

¹¹ Technical Solution Assessment Methodology Report, November 2018, Analysys Mason

¹² Costs associated with the set up and establishment of NBPco into a commercially viable business

¹³ Capital investment here also includes the costs of renting existing infrastructure such as poles and ducts, the reuse of which is in lieu of capital expenditure on new infrastructure.

- **Deployment subsidy**, which is paid on a milestone basis in respect of the successful deployment of the pass network (i.e. paid by Deployment Area);
- **Connection subsidy**, which is paid on a take-up milestone basis in respect of first time connections to premises (i.e. paid for every 1,000 connections completed); and
- **Conditional subsidy**, which is an additional capped subsidy allowance from which further subsidy may be paid to NBPco where there is an adverse variance in an agreed "Contract Assumption". If there is a beneficial variance in such a Contract Assumption the contract provides that the full benefit of the saving is retained by Government (i.e. there is a reduction in subsidy payments). The contract as drafted provides that NBPco bears the risk of adverse cost variances in excess of the cap and of adverse cost variances not covered by Contract Assumptions. Contract Assumptions as drafted (if implemented appropriately) are therefore intended to provide a mechanism to address the most significant build and operational cost risks that are outside of the control of NBPco [REDACTED] the price for which might otherwise have been included as additional risk costs in the Bidder's Project Cost Model, likely resulting in a higher subsidy requirement. By using the Contract Assumptions mechanism (if implemented appropriately), this additional cost should now only be incurred by Government if the risk actually materialises.

Figure 1.1 below provides a comparison of the subsidy required by the Bidder in its Final Tender and the subsidy forecast by the Department's Budget Model. These figures are in nominal terms (as required by DPER) and exclude VAT.

Figure 1.1: Subsidy Comparison (Final Tender versus DCCAE Budget Model)



Of the €2,143m¹⁴ total nominal subsidy payments bid by the Bidder, 85% (€1,823m in nominal terms¹⁵) is intended to be paid within the first 10 years, subject to certain milestones being met by NBPco. The detail of this is set out in section 4.5.2.3 of this report.

The deployment subsidy required by the Bidder to establish the network to pass 100% of premises in the Intervention Area is circa [REDACTED] which is circa [REDACTED] more than the Department's Budget Model, a difference of 7%. This difference results from some key differences in cost modelling assumptions and financing assumptions (both described below).

The connection subsidy forecast by the Bidder [REDACTED] is [REDACTED] [REDACTED] higher than the connection subsidy of [REDACTED] forecast by the Department's Budget Model. This difference results from a change to the structure of the connection subsidy, the Bidder assuming a higher number of first time connections [REDACTED] than the Budget Model [REDACTED] and a higher cost of connection per premise (longer cable length for each connection, as well as a higher unit cost of the cable). However the contractual payment provisions provide that connection subsidy actually payable by the Department will be based on the actual number and actual cost of first time connections provisioned by NBPco (subject to a cap [REDACTED]). [REDACTED] therefore the final connection subsidy could either be less than the projected [REDACTED] or no more than [REDACTED] higher depending on the actual outturn position over the life of the contract.

There is also a conditional subsidy allowance of up to [REDACTED] in the Bidder's Final Tender, which is a subsidy amount set by the Department in the ISFT. This comprises circa [REDACTED] for Contract Assumptions (the purpose of which is explained above) and [REDACTED] for connections (referenced above). There was no equivalent allowance in the Budget Model as Contract Assumptions were introduced after the Budget Model was prepared. However, to provide some context for this allowance, the Project Re-Appraisal in May 2018 identified an additional contingency allowance of [REDACTED] above the core subsidy payments of €1,814 million and also estimated that subsidy payments would increase by [REDACTED] if there was an increase of 10% in the capital and operating costs assumed by the Budget Model.

Accordingly there is a net difference of circa [REDACTED] in the aggregate deployment subsidy and connection subsidy between the two models. If the conditional subsidy of [REDACTED] is also taken into account, the difference between the Bidder's final tender model and the Budget Model is circa [REDACTED] if the Budget Model contingency is excluded, or circa [REDACTED] if the Budget Model contingency is included.

The key cost and revenue differences that constitute the difference of circa [REDACTED] in the aggregate deployment subsidy and connection subsidy between the two models are illustrated in the following table:

¹⁴ €2,041m in real terms (i.e. January 2019 prices)

¹⁵ €1,783m in real terms (i.e. January 2019 prices)

Table 1.1: Subsidy Payment Reconciliation

Subsidy Payment Reconciliation		
Total Subsidy Payments in the Budget Model		
Differences with the Bidder's Model		
Revenue differences (lower revenues in Bidder's Model)		
Capex to Pass		
Capex to Connect		
Operating Costs		
Margins and Contingencies		
Total additional costs in the Bidder's Model		
Infrastructure Rental		
Private Finance, Tax and Working Capital costs		
Total reductions in costs in the Bidder's Model		
Net total additional costs in the Bidder's Model		
Total Subsidy Payments in the Bidder's Model		2,143

A high level summary of the key differences between the two models is as follows:

- The Bidder has assumed less revenue than the Budget Model over 25 years. Whilst the Bidder forecasts a higher take-up at the end of the contract [REDACTED], the take-up growth rate assumed by the Bidder is much lower than the Budget Model. In addition, the Bidder has assumed [REDACTED] compared to flat pricing in the Budget Model;
- Whilst the total capital build cost for the pass network (excluding margins & contingency) in the two models is very similar, the Bidder has assumed higher connection costs as already described above;
- The Bidder has assumed higher operating costs. [REDACTED]
- The Bidder has applied additional margin and contingency on build and operating costs. [REDACTED]
- The Bidder has assumed significantly lower infrastructure rental costs. [REDACTED] and [REDACTED]
- Private finance costs are lower in the Bidder's model as less private finance is used and the resulting total cost of the private finance is lower than the Budget Model.

These result from the Department's decision to permit the majority of subsidy payments to be paid during the deployment period in the Bidder's final tender model, relative to the Budget Model, in order to reduce costs. In addition, as the Bidder assumed less commercial revenue and higher costs, the tax cost in the Bidder's model is lower.

Each of the above areas of difference has been considered from the viewpoint of - what if the Departments assumptions prove to be the more accurate than the Bidders. In each instance the Department has provisions under the contract (if implemented appropriately) to allow it to share in the savings generated.

As we explained in section 1.2, Analysys Mason's review and the findings of the technical evaluation of the final tender conclude that the Bidder has proposed a technical solution that is capable of delivering the benefits that Government requires, is in line with international best practice and is based on a higher capacity technology that can be considered value for money in the context of the NBP. However, as described above, the Bidder's final tender pricing is higher than expected in some key areas. According to the Bidder this pricing approach reflects the large scale and high risk profile of the Project. It reflects their view on key assumptions which differs from that of the Department and its advisers at this stage. However it is not possible to say with certainty which set of assumptions is correct and only the passage of time will allow that assessment to be made. It's a large complex project and hence a difficult one to achieve a consensus view on certain key assumptions.

Given the scale of the commitment required from the private sector partner (to pass 536,000 premises in one deployment roll out programme) and the level of risk involved, it would not be unexpected for an investor to be prudent in its approach to pricing the cost of the Project so this is also a factor to consider when looking at the differences above.

In particular, whether as a single bidder for a state-led intervention or otherwise, it is normal market practice for any investor to seek to:

- Mitigate risk of financial failure by ensuring risk is appropriately accounted for in its estimates of the cost to build and operate a network and the revenue it might generate, (which in this case results in a higher estimate of the maximum subsidy required);
- Mitigate significant deployment risks that are outside their control; and
- Have the potential for higher than forecast returns, to balance downside risks.

Accordingly, the fact that the Bidder has assumed higher costs in a number of areas and lower revenues follows the above investor approach and is not inconsistent with other gap funding contracts internationally (i.e. where, on the basis of the Bidder's assumptions, the subsidy requirement may have been higher at tender stage and then subsidy payments are either reduced or clawed back during the delivery of the project). It is also not possible to say at this time which of the Bidder's pricing or the

Departments pricing will be more likely to reflect the actual outcomes over the contract period, as both are based on what are ultimately a set of assumptions which will only be proven with time.

For a gap funding project of this nature, whilst interim comparisons of actual and forecast costs and benefits can be made as the network is deployed and operated, value for money can only be assessed with certainty at the end of the contract period, when the final outturn costs and benefits, net of clawback, are known.

Two key issues for Government are therefore whether: (i) the NBP contract provides Government with appropriate contractual mechanisms and governance arrangements; and (ii) whether Government has appropriate skilled resources to ensure those contractual mechanisms and governance arrangements are implemented appropriately, to:

- drive efficient and cost effective deployment and operation of the broadband network by NBPco; and
- reduce or claw back the subsidy provided to NBPco in the event that the cost of deployment is lower or the financial performance of the network is better than forecast in the final tender.

The contract does make provision for a variety of protections for Government. However a contract is only effective if it is appropriately adhered to and implemented by both parties. The contract is equally only effective if it is appropriately delivered on by the counterparty. We have made a series of recommendations throughout this report as to the level of effort required and the appropriately skilled Government team that will be needed to monitor and oversee the various contractual provisions so that Government can exercise the appropriate level of oversight and claim back the appropriate level of savings as provided for in the contract. This is set out in more detail in subsequent sections.

1.6 Contractual Solution

The NBP contract is a very detailed contract tailored specifically for the unique requirements of the state-led intervention as set out in the Broadband Strategy for Ireland (the “Intervention Strategy”). As noted above, any contract is only effective if appropriately implemented by both parties. All of our comments on the contract are based on the important assumption that the contract as drafted achieves its intended legal effect.

The intent of the contract is that, in summary terms, if its provisions are implemented appropriately, it provides for:

- The Department to be allowed to review, scrutinise and monitor the planned network build from Final Tender through to completion of detailed designs;
- The Department to be allowed to monitor, test and verify the actual network build and build costs on a transparent, open book basis;

- The payment of subsidy for the satisfactory achievement of clearly defined deployment milestones for the establishment and mobilisation of NBPco, completion of detailed designs, completion of the network passing every 5,000 premises, completion of the network in each Deployment Area and completion of every 1,000 premises connected (new connections only);
- The clawback of a majority of savings in network build costs and connection costs;
- Cost overruns to be borne by NBPco, with the exception of cost increases that are directly attributable to Contract Assumptions (as described above), which shall be borne by the Department up to the conditional subsidy contractual limit. The contract provides for NBPco to bear all costs in excess of this limit.
- NBPco to be contractually committed to deliver the outcomes (i.e. standards of network build and performance) set out in the contract and its Final Tender, subject to the Department's right to amend those obligations to mitigate additional costs that it would otherwise incur as a result of Contract Assumptions;
- NBPco to incur delay payments (i.e. deductions in subsidy payments) in the event of material delays to the achievement of deployment milestones. NBPco to also incur performance credits (i.e. repayment of subsidy) in the event that the network does not perform to the standards that it was contracted to achieve;
- NBPco may forego its right to own the network (i.e. Government will have the right to take over the ownership of the network) if NBPco fails to complete the deployment of the network by the longstop dates stated in the contract; and
- Compensation on termination to be paid by the Government to NBPco in the event the contract is terminated under a range of scenarios.

In addition, in light of the Bidder's proposed commercial and contractual structure, the Department incorporated additional governance arrangements into the contract in advance of final tender which seek to further protect the network deployment and the provision of services to end users over the full contract period and beyond. The contract provides for the following:

- **Governance of the forecast costs of network deployment** – the inclusion of governance arrangements in respect of changes in the forecast cost of network deployment at the detailed design stage, so that the Department is in a position to take decisions and actions to avoid additional costs in certain circumstances and otherwise to minimise cost increases in order to limit the amount of conditional subsidy that may be required to be provided as a result of Contract Assumptions;
- **Encroachment** – the ability for NBPco to request a change to the Intervention Area (i.e. the premises to which it must deploy the network) and to the subsidy payments where and to the extent that one or more commercial operators has deployed high speed broadband services to a material number of premises in a Deployment

Area in advance of NBPco having commenced its deployment in that Deployment Area. This is designed to protect the viability of NBPco post deployment;

A series of five horizontal black bars of increasing length, each ending in a white rectangular gap. The bars are positioned vertically, with the first bar at the top and the fifth at the bottom. The gaps are located at the right end of each bar.

If, following consideration of the overall findings of this report, appropriate refinements are agreed by the parties to further enhance the appropriate safeguards within the NBP contract for Government, the NBP contract (if implemented appropriately) should provide Government with appropriate mechanisms to:

- monitor the deployment of the network, including monitoring whether NBPco is:
 - Proactively identifying, managing and mitigating deployment risks; and
 - Returning appropriate levels of subsidy back to the State where provided for under the various clawback provisions (in accordance with the gap funding principle and the Intervention Strategy);
- monitor the operation of the network, including monitoring whether NBPco is:
 - Delivering levels of service that are in line with market benchmarks;
 - Operationally robust such that the long term provision of services is secured; and
 - Returning appropriate levels of subsidy back to the State where, and to the extent that, NBPco is achieving levels of financial performance that exceed those forecast in its financial model at final tender stage.

An addendum to this report will be prepared setting out the refinements that both parties agree are appropriate to be made to the contract to further enhance the appropriate safeguards within the NBP contract for Government.

1.7 Conclusion

The findings of the technical, commercial and contractual evaluation of the Bidder's final tender in respect of the Department's requirements (as set out in the Evaluation Methodology) are set out in the Final ISFT Evaluation Report. That evaluation report concludes that the final tender has passed the completeness, compliance and robustness checks set out in the Evaluation Methodology and that the final tender is of sufficient technical and commercial quality, as evidenced by the scores awarded in respect of the technical and commercial evaluation criteria.

Summary

This assessment of the Bidder's solution under the Public Spending Code has found that:

- According to Analysys Mason, the technical solution proposed by the Bidder is projected to be capable of delivering the benefits sought under this project however this comes at a higher cost than expected. The Cost Benefit Analysis sensitivity completed by PwC using the Bidders assumptions still estimates a positive Benefit to Cost Ratio.
- The underlying cost for deployment (build) is broadly in-line in aggregate terms with the Department's expectations, however there are notable financial differences in margins, contingencies, operational model and in particular revenue, largely related to differing views on underlying assumptions. In this context it should be noted that:
 - It would be challenging for any party to achieve a high degree of certainty on the underlying cost base and pricing of risk on a project of this scale.

Differences in key assumptions by different parties would not be unexpected;

- In any project where the State seeks to transfer revenue or demand risk, the private sector is likely to set their expectations of demand lower in order to manage their risk exposure. The lack of competitive tension in the project may have been a contributory factor in this regard. However experience on other broadband projects in Ireland would also indicate challenges with the rate of take up of a new service such as this. The Bidder's approach to setting demand assumptions has to be considered in this context. It is possible that the Bidder's assumptions could turn out to be more accurate than those of the Department in the long term but this remains an unknown; and
- If the Department's underlying assumptions ultimately turn out to be more accurate than the Bidder's, the contract regime as drafted provides for the Department to share in any savings in costs or additional revenues generated. Each of the areas of key difference noted above are captured by a clawback regime that on average shares 50-100% of savings back with the Department.
- In the event that the Department's underlying assumptions for the project prove to be more accurate than the Bidder's, the clawback mechanism in the contract will reduce the headline differential between the parties. The extent of the reduction is unknown but is unlikely to remove the differential completely.

As stated above, it is important to recognise that for a gap funding project of this nature, whilst interim comparisons of actual and forecast costs and benefits can be made as the network is deployed and operated, value for money can only be assessed with certainty at the end of the contract period, when the final outturn costs and benefits, net of clawback, are known.

If implemented and monitored appropriately, the contract should provide Government with mechanisms to exercise oversight over the deployment and long term operation of the network. The contract should also provide a mechanism for Government to take ownership of the network if at any time NBPco is unable or unwilling to deliver the services in accordance with the contract over the next 25 years. However a contract is only effective if properly implemented by both parties.

The key question for Government now is whether the Government wishes to contract with the Bidder at the final tender price and then proceed to effectively implement the protections and provisions in the contract with the aim of securing reductions in / clawback of subsidy over the contract's life.

The contract will however only be effective if an appropriately skilled and resourced multidisciplinary Government team is put in place to appropriately implement the protections and provisions drafted into the contract.

This is now a critical factor for the successful delivery of the NBP intervention.

2 Introduction

2.1 NBP State-Led Intervention

The Government's aim for the NBP state-led intervention (the "Project") is to ensure that 100% of premises in Ireland have access to high speed broadband at prices that are affordable and in line with comparable products in non-intervention areas. An early action undertaken by the Department therefore was to conduct a mapping exercise to identify those areas of the country where high speed broadband is not available and not expected to be made available on a commercial basis in the near future. This is referred to as the "Intervention Area" which the NBP intervention aims to address.

At the time the Project's procurement commenced in December 2015, the High Speed Broadband Map 2020 (also published in December 2015) presented the output of this mapping exercise, showing the wider industry's commitments at that time to extend high speed broadband services by the end of 2020. The Map indicated that 70% of addresses in Ireland should have access to high speed broadband within that timescale. The balance of 30% of premises, approximately 757,000 addresses, therefore represented the target for the state-led intervention.

In April 2017, the Department removed circa 300,000 premises from the intervention area as a result of eir committing (in a Commitment Agreement signed with the Minister) to extend its high speed broadband network on a commercial basis to a further 300,000 premises (the "300k Extension Area"). Separately, analysis undertaken by the Department identified an additional circa 85,000 premises which did not have access to high speed broadband. These premises were added to the intervention area, with the result that, in overall terms, the intervention area reduced to circa 542,000 premises.

The Department subsequently issued to Bidders on the 2nd June 2017 updated versions of the Premises Database and the list of Strategic Community Points for the purposes of the initial tender phase.

In January 2018 the Department launched a public consultation on the Strategic Environmental Assessment and Appropriate Assessment of the National Broadband Plan Intervention Strategy and the Department used this opportunity to consult on the 2017 update to the High Speed Broadband Map. A further version of the Premises Database was issued on the 20th June 2018 and the list of Strategic Community Points was further updated on 2 August 2018. The result in overall terms was an intervention area of circa 536,000 premises, which formed the basis for the final tender phase in September 2018.

2.2 Project Context

The NBP Project is unique in Ireland and to a lesser degree internationally. The problem it is trying to solve is not unique, however there is no one standard solution being implemented internationally at this stage. It is a project for the deployment of

high speed broadband services to circa 536,000 of the hardest to reach premises in Ireland, premises which, in the absence of the State's intervention (and based on current commitments by the wider industry), would be unlikely to receive such services for at least the next three years as the wider industry has indicated that it is currently not commercially viable to do so without subvention.

A key requirement included in the state-led intervention is that the entity responsible for establishing and operating the wholesale broadband network should be a separate legal entity ("NBPco"), which should be subject to contractual arrangements that provide a high level of transparency in respect of its use of public subsidy and the delivery of the state-led intervention throughout the contract term.

The technical solution is to be predominantly a "Fibre to the Home" (FTTH) solution, consisting of a network of fibre cable deployed on a combination of rented and new poles and ducts (see section 5.3.2), using exchange co-location products to provide natural infrastructure aggregation points to host active equipment providing backhaul to a base station.

Public subsidy is to be invested in the Project in accordance with the commercial stimulus model, otherwise known as "gap funding". This means that the public subsidy paid to NBPco should be no greater than the amount of the capital related investment costs and NBPco establishment costs¹⁸ that cannot be financed by the Project itself on a normal commercial basis (i.e. public subsidy should only be used to fund the gap between the commercially viable investment level, which is to be funded by NBPco, and the total investment required). This is calculated by forecasting the capital expenditure, financing costs, operating costs and commercial revenues of the Project over a 25 year contract period, and then calculating the amount of capital investment¹⁹ and establishment costs that needs to be funded by Government in order for the private sector partner to achieve a commercial rate of return on the remaining capital investment that it finances.

In return for this public subsidy, the contract will provide for NBPco to contractually commit to:

- Deploy high speed broadband services to 100% of the 536,000 premises in the Intervention Area, which includes the hardest to reach premises in Ireland;
- Complete the deployment in a single programme, planned over 7 years;
- Achieve specified Milestones Dates for completion of deployment to Strategic Community Points and Deployment Areas (each circa 5,000 premises), or otherwise suffer reductions in public subsidy;
- Pass and connect new premises that are constructed and require a connection during the contract period;

¹⁸ Costs associated with the set up and establishment of NBPco into a commercially viable business.

¹⁹ Capital investment here also includes the costs of renting existing infrastructure such as poles and ducts, the reuse of which is in lieu of capital expenditure on new infrastructure.

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- Achieve levels of service that are in line with market benchmarks, or otherwise suffer reductions in public subsidy in addition to the remedies that apply in the normal commercial market (i.e. lost customers); and
- Deliver these commitments in return for a public subsidy which will be set at a maximum level under the contract. The Bidder had to bid the subsidy it requires in its Final Tender, which is before it has completed its surveys and low level designs for the deployment (the Bidder therefore needs to mitigate this risk).

The scale of this commitment reflects the Government's commitment to deliver high speed broadband to every citizen and business in Ireland, regardless of location, at a price that is affordable and in line with comparable products in non-intervention areas.

The closest comparisons are:

- the commitment made by Siro following its launch in 2015 to deliver 1 Gigabit speeds to 500,000 premises in 50 regional towns across Ireland on a commercial basis (i.e. with no subvention); and
- the commitment made by eir in 2017, in its Commitment Agreement with the Minister, to deploy high speed broadband services to circa 300,000 premises with no subvention, which resulted in the removal of these premises from the NBP intervention.

The Department's earlier contract with "Three" for the 2008 National Broadband Scheme was for the delivery of a basic broadband service to some 238,000 premises using a mobile technology platform and was for a much lower level of subsidy in comparison to the NBP (section 3.4). The Metropolitan Area Networks Project, which commenced in 2004, was for the deployment of ducting, high capacity fibre optic cable and other associated active and passive network infrastructure (i.e. "middle mile") to allow retail service providers to commence commercial operations in areas not previously served by the market. It involved the public sector designing, financing, building and owning the passive network infrastructure, with a private sector operator (enet) responsible for installing the active elements and for network operation.

Given the commitment required of the private sector under the NBP contract and the level of risk involved, it is normal market practice for any investor to seek to:

- Mitigate risk of financial failure by ensuring risk is appropriately accounted for in its estimates of NBPco's deployment costs, operating costs, take-up and revenues (which in this case results in a higher estimate of the maximum public subsidy required);
-
- Mitigate significant deployment risks that are outside NBPco's control; and
- Have the potential for higher than forecast returns, to balance downside risks.

The Government's assessment of the financial, social and economic importance of this Project is such that the Government wants to mitigate the risk of the Project failing once a contract has been signed. It will be important for Government that any entity

taking on this project can deliver the Government's commitment to high speed broadband for every citizen and business in Ireland, and to secure the provision of those services for a period of at least 25 years.

The Government therefore needs to be confident that NBPco has the capability and capacity to deliver the Project on a commercially viable basis, both in terms of its deployment and its operation.

It is also important that the Project represents an acceptable outcome for the State, in terms of the subsidy that it pays to NBPco.

Accordingly, the procurement process and contract are designed to try and secure:

- A final tender which:
 - Evidences that NBPco has the capability and capacity to deliver the Project on a commercially viable basis, in terms of its deployment and its operation;
 - Provides an appropriate balance of risk and reward for NBPco's investors; and
 - Caps public subsidy at a level that is acceptable to the State, enabling the Project to proceed to the award of the NBP Contract;
- A contractual right for the Department to closely monitor the deployment of the network, to determine if NBPco is:
 - Proactively identifying, managing and mitigating deployment risks; and
 - Returning public subsidy to the State under the clawback mechanism where, and to the extent that, it is not required for the deployment of the network on a commercially viable basis (in accordance with the gap funding principle and the Intervention Strategy);
- A contractual right for the Department to closely monitor the operation of the network, to determine if NBPco is:
 - Delivering levels of service that are in line with market benchmarks;
 - Returning appropriate levels of public subsidy to the State under the clawback mechanism where, and to the extent that, NBPco is achieving levels of financial performance that exceed those forecast in its financial model at final tender stage.

2.3 Project Chronology

The NBP contract that is the subject of this procurement has been designated as a "service concession" as defined in the Public Procurement Directive 2004/18/EC and the European Communities (Award of Public Authorities' Contracts) Regulations 2006. Consequently, that Public Procurement legislation does not apply to this Procurement in accordance with Article 17 of that directive and Regulation 14 of those regulations. Nevertheless, the competitive dialogue procedure is being followed as best practice for the purposes of this procurement.

Prior to commencing the procurement, the Project was subject to detailed appraisal which involved the preparation of the Broadband Strategy for Ireland (Intervention

Strategy) and a number of associated reports (see section 3.2). The Department also conducted an early market engagement exercise²⁰ during which the draft Intervention Strategy and procurement approach were discussed with potential Bidders.

The commencement of the procurement was approved by Government in December 2015 and there has been four stages to the competitive dialogue process:

- Stage 1: pre-qualification to select a short list of Bidders. It was at this short listing stage that the Government selected its preferred ownership model (commercial stimulus / gap funding) for the state-led intervention (see section 4.2);
- Stage 2: dialogue with Bidders followed by the submission of detailed solutions;
- Stage 3: further dialogue with the remaining Bidder followed by submission of a refined detailed solution (as described below, two Bidders dropped out of the procurement process leaving one Bidder to submit its refined detailed solution);
- Stage 4: final dialogue with the remaining Bidder, followed by the formal closing of dialogue and the submission of the final tender.

The key events and dates in the NBP procurement process are summarised in Figure 2.1 below and are further described in the paragraphs that follow.

²⁰ Published in a Prior Information Notice in the Official Journal of the European Communities (OJEU)

Figure 2.1: Key events and dates in NBP procurement process



From the perspective of this report, the most significant stage in the procurement commenced in September 2017 when Siro withdrew from the procurement stating that it had decided to withdraw as it "could not develop a competitive business case to justify continued participation in the process".

The Department therefore received detailed solutions from the two remaining Bidders (eir and GENC) in September 2017. Neither of the Bidder's solutions were sufficiently developed at that stage to be capable of satisfying the Department's requirements for

the state-led intervention. In particular, both of the solutions projected significantly higher levels of subsidy than the Department had forecast in its own budget model for the 542,000 premises²¹.

Between September and December 2017 the Department conducted detailed reviews of the Bidders' technical solutions, cost models and financial models, and also the Department's own budget model. On the basis of these reviews, the Department concluded that the subsidy required by the private sector to deliver the state led intervention would be higher than the subsidy level forecast by the Department's budget model in September 2017 (see section 3.2).

As such, and following consultation with the Department for Public Expenditure and Reform, the Department made the decision in January 2018 to reappraise the Project and to prepare an updated budget model to reflect what it now believes to be an appropriate estimate of the project costs and subsidy requirement.

On 31st January 2018, following the commencement of the project re-appraisal, eir announced its decision to withdraw from the NBP procurement, leaving only one Bidder in the process. Eir's letter to the Minister explains the reasons for its withdrawal, which can be summarised as follows:

- Eir stated that its withdrawal was "driven by a range of commercial, regulatory and governance issues", with eir's Board having "grave and growing concerns that the current regulatory environment for telecommunications in Ireland has introduced new uncertainties and greater risks which dis-incentivise future fibre infrastructure investment". Eir's stated concerns included:
 - The proposal by the Department to compel eir to provide access to its network at prices that are below the regulated prices (for NBP purposes only); and
 - ComReg's fibre to the cabinet review, and the move towards cost-based pricing.
- Eir highlighted that there remained "significant 'red line' issues" with the contract and that it did not believe it would be possible to reach agreement on the terms of the contract within the framework of the NBP procurement.
- Eir also stated its belief that:
 - "the NBP framework, as well as being incapable of acceptance by eir, will drive very substantial additional subsidy costs and delays to the roll-out of high speed broadband to rural Ireland"; and
 - the NBP framework will result in "duplication and inefficiency which will increase the ultimate cost to deliver high speed broadband to rural Ireland in those areas where it is non-commercial to provide services". Eir stated that requirements such as ring-fenced funding from the private sector (required by the Department to provide certainty of available funding for deployment), the creation of a wholly separate wholesale subsidiary company (required by the Department to ensure transparency and accountability in the delivery of the intervention, including non-discrimination and clawback) and the proposed restrictions on eir's wholesale division's ability to compete in the NBP areas (i.e. preventing openeir from

²¹ It should be noted that Bidders are not provided details of the Department's Budget Model.

directly competing with the special purpose company, NBPco, that eir would establish with public subsidy to deliver the state-led intervention) were all stated by eir as critical factors in its withdrawal.

Following eir's withdrawal, the Department immediately reviewed its options and concluded that, subject to the outcome of the project re-appraisal, it should:

- Continue the competitive dialogue procurement process with the remaining Bidder;
- Introduce a Refined Detailed Solutions (RDS) stage prior to Final Tender stage in order to address the issues identified in the feedback provided to Bidders on their detailed solutions (i.e. areas identified where the Bidders' solutions were not sufficiently developed); and
- Establish a means for assessing and evidencing whether the procurement delivers an acceptable outcome for Government in cost, quality, risk and timescale terms, in the context of a single bidder situation where there is an absence of competition – being this Single Bidder Solution Assessment Report.

The Department therefore continued its dialogue with the remaining Bidder, with such dialogue focusing on the Bidder's technical solution, cost model and financial model and the terms of the NBP contract. The purpose of the dialogue was to facilitate the Bidder in refining its solution so that its' RDS would be capable of satisfying the Department's requirements (in technical, commercial and contractual terms).

The Bidder's RDS was formally submitted in June and July 2018 (in two parts). The Bidder's RDS was still not sufficiently developed to be capable of satisfying all of the Department's requirements for the state-led intervention (in technical, commercial and contractual terms). The Department therefore entered into a short, final stage of dialogue with the Bidder to allow the Bidder to further refine its RDS so that its' Final Tender would be capable of satisfying the Department's requirements.

Whilst in one sense it has been a long procurement process to this point, that is reflective of the complexity of the issues involved and the bespoke (by necessity) nature of the solution that is under discussion. The level of detailed work that was to be undertaken at key stages has been significant and at times has had to be done under significant time pressure on all sides to adhere to a timetable.

The Bidder's Final Tender was formally submitted on 18th September 2018.

2.4 Purpose of this Report

In light of that fact that two Bidders withdrew from the procurement process before final tender, it has obviously not been possible to compare the final tender received to any competing bid. This has meant that additional detailed analysis is required to inform the Department's consideration of whether the final tender submitted by the remaining Bidder is an acceptable outcome for Government, by reference to the Public Spending Code.



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Single Bidder Solution Assessment Report
December 2018

This "Single Bidder Solution Assessment Report" has been prepared by KPMG to inform the Department's assessment of whether it considers the final tender (i.e. solution) submitted by the Bidder to be an acceptable outcome for Government, by reference to the Public Spending Code.

The report presents the findings of the single bidder solution assessment that has been conducted by the Department and its advisers on the Final Tender submitted by the Bidder on the 18th September 2018.

The solution assessment methodology applied in this report is described in section 3 of this report.

This Single Bidder Solution Assessment Report is not a value for money assessment of the final tender submitted by the remaining Bidder. In respect of a gap funding contract of this nature, whilst interim comparisons of actual and forecast costs and benefits can be made as the network is deployed and operated, value for money can only be assessed with certainty at the end of the contract period, when the final outturn costs and benefits, net of actual clawback, are known.

This Single Bidder Solution Assessment Report is also separate to the evaluation of the final tender, which has been undertaken by the Department in accordance with the Evaluation Methodology. The Evaluation Methodology sets out the methodology and award criteria that the Department will apply to identify the most economically advantageous tender that is capable of satisfying the Department's requirements, as set out in the ISFT. The final tender received has been the subject of a separate technical, commercial and contractual assessment in line with the Evaluation Methodology and the findings of the evaluation are dealt with in the Final ISFT Evaluation Report. However it is relevant to note that the overall findings of the various evaluation teams (including DCCAE, Analyses Mason and KPMG) were that the final tender is capable of satisfying the Departments requirements as set out in the ISFT.

3 Solution Assessment Methodology

3.1 Public Spending Code

The Public Spending Code sets out the obligations and requirements of those responsible for the spending of public money at each key point in the expenditure lifecycle. In respect of the tender stage²², the Code requires that:

"The best proposal is then compared with what was expected at the Approval in Principle point. If the costs and output from the best proposal do not match the costs and benefits that led to the Approval in Principle then the Appraisal decision may have to be reviewed."

Within the context of the NBP procurement, this means that the costs and outputs of the Final Tender should be compared to the forecast costs and benefits of the "Approval in Principle" (see section 3.2 below).

For this Project, "costs" may be interpreted as:

- the total capital and operating costs forecast to be borne by NBPco; and/or
- the total subsidy payments forecast to be paid by the State.

It is important to recognise in the context of this Project that the costs / subsidy payments and outputs / benefits set out in the Final Tender are not all fixed, and that they may vary over the life of the Project in accordance with the terms of the NBP contract. For example, many of the benefits of the project are linked to customer take-up²³, which may vary significantly from the profile assumed in the Final Tender.

Such comparison of costs and outputs / benefits therefore also needs to take into account the potential for costs / subsidy payments and outputs / benefits to vary over the life of the Project, and to consider the potential implications of such variations for the State.

The Public Spending Code requires a number of questions to be considered at the tender stage, which we have summarised as follows:

- Do the costs and outputs of Final Tender match the costs and benefits that led to the "Approval in Principle" (see section 3.2 below)?;
- If the Final Tender exceeds the "approved budget" (see section 3.2 below), can reductions in costs / subsidy be achieved without lowering the quality of the solution below acceptable levels, in order to bring the project within the "approved limit"?; and
- If the Final Tender is materially above the "approved limit":
 - Is a revised Cost Benefit Analysis required?; and/or

²² Public Spending Code section B.02 (The Planning Stage), paragraph 7 (Review using Tender Prices)

²³ National Broadband Plan: Benefits of High Speed Broadband, PricewaterhouseCoopers, July 2015

- Is a further Project Re-appraisal required (for approval of a raised financial limit)?

The comparisons and questions set out in the Code, as described above, will be examined in this Single Bidder Solution Assessment Report.

The Report will also consider how costs / subsidy and outputs / benefits are to be managed during the life of the Project, in accordance with the terms of the NBP contract. This will address the requirements of the Public Spending Code at the management stage²⁴, in particular:

- Assigned responsibility for delivery;
- Appropriate structures for monitoring and management;
- Means of measuring if on target with expectations; and
- Means of managing adverse developments or changes in circumstances.

3.2 Approval in Principle

The Project was subject to detailed appraisal in 2015, which involved the preparation of the following reports:

- A draft Broadband Strategy for Ireland ("Intervention Strategy"), Cost Benefit Analysis and state aid report by PwC;
- An ownership report, financial appraisal, funding report, and governance report by KPMG; and
- A technical report by Analysys Mason.

On the basis of these reports, in July 2015, the Government received an estimate of the Project's subsidy requirement and approved the publication of the draft Intervention Strategy. The reports were subsequently updated in February 2016 following public consultation on the draft Intervention Strategy.

In advance of ISDS submissions in September 2017, the Department concluded its preparation of a new budget model for the NBP intervention, based on the updated Map (circa 542,000 premises) published in April 2017. This budget model projected the subsidy payments for the Project to be €787 million in total nominal terms.

At the ISDS stage, both Bidders (eir and GENC) projected significantly higher levels of subsidy than the budget model. Following a detailed review of the forecast costs and an evaluation of the two Bidder's cost and financial models, the Department formed the view that the subsidy payments required by Bidders at Final Tender stage were very likely to be higher than the September 2017 budget model. As such, and following consultation with the Department of Finance, Department of the Taoiseach and the

²⁴ Public Spending Code section C.01 (Management)

Department of Public Expenditure and Reform, the Department made the decision to reappraise the Project in accordance with the Public Spending Code.

The project re-appraisal process was finalised in May 2018. This included the preparation of a new budget model for the Project, reflecting the Department's updated forecasts of the costs and revenues associated with the Project and the level of public subsidy that is likely to be required. The Cost Benefit Analysis for the Project was also revisited by PwC²⁵ as part of the re-appraisal process, estimating a Benefit to Cost ratio of 1.68 based on the new budget model.

Figure 3.1 below illustrates the main changes in model assumptions and identifies how they impacted the forecast subsidy payments (excluding VAT) between the September 2017 budget model and the revised budget model finalised in May 2018. Reductions in subsidy payments are shown in orange and increases are shown in grey.



The net impact of these changes was [REDACTED] increase in the expected total nominal subsidy payments (excluding VAT), which equates to a [REDACTED] increase in NPV terms (excluding VAT). The expected total nominal subsidy payments have increased to €1,814 million excluding VAT and contingency, or [REDACTED] excluding VAT but including contingency.

It can clearly be seen from the figure above that the major contributing factors to the increase in expected total nominal subsidy payments are the updated cost model and the updated blended equity IRR.

Updated Cost Model

The Department's budget model relies on key assumptions provided by Analysys Mason in relation to the re-use of infrastructure, the type of infrastructure that may be used, the mix of wholesale regulated products available and the volumes required. The

²⁵ Cost Benefit Analysis update by PwC, August 2018

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September 2017 budget model made some assumptions with respect to the mix and volumes of poles and ducts (where duct is more expensive) in the Intervention Area and the choice of wholesale product to transverse the eir 300K Extension Area to get to the Intervention Area. The September 2017 budget model relied on the use of eir wholesale's FTTH VUA Integrant ("FVI") product, which is an active product that would allow the re-use of eir's network (including fibre cable deployed and active equipment deployed by eir) to cross the 300k Extension Area. Through the ISDS submissions of both eir and GENC, it emerged that some of these assumptions needed to be amended

Upon review by the Department and Analysis Mason, the budget model assumptions were updated by the Department and Analysis Mason which had the following impacts:

- Additional rental costs of infrastructure were included as a result of an increase in the length of duct rental, rather than pole rental, from eir wholesale. This added circa [REDACTED] in operating expenditure over the contract period;
- Additional capital costs as a result of moving from the rental of eir wholesale's FVI products to the renting of eir wholesale's poles and ducts and NBPco deploying its own fibre cable and active equipment. This added net circa [REDACTED] of upfront capital expenditure;
- Additional private finance costs to fund the additional upfront capital expenditure. This added circa [REDACTED] of additional private finance costs over the contract period²⁶; and
- Additional tax and working capital costs of circa [REDACTED]

Updated Blended Equity IRR

The budget model is optimised by estimating the level of subsidy payments that may be required to enable the equity investors in NBPco to achieve a commercial return on their investment. The pre-tax blended equity IRR targeted in the September 2017 budget model was [REDACTED] primarily based the typical regulatory return allowed for regulated entities [REDACTED]

Based on an assessment of the eir and GMC ISDS submissions, it was apparent that both Bidders had envisaged more risk, particularly demand risk, than had been factored into the September 2017 budget model. Additional analysis was undertaken by KPMG on behalf of the Department and a revised pre-tax blended equity IRR of [REDACTED] was agreed for use in the updated budget model to better reflect the level of return required for a project bearing market take up and demand risk. This revised assumption added circa [REDACTED] of additional private finance costs over the contract period, plus circa [REDACTED] of additional tax and working capital costs.

²⁶ This uplift was based on maintaining the same level of subsidy payments during the deployment period

These subsidy increases are partly offset by subsidy decreases, resulting predominantly from the updated contract payment mechanism and other changes to the model optimisation (which include increased gearing (debt levels), increased subsidy payments during the deployment period and increased terminal value). Full details of these changes is presented in the budget model "bridging report"²⁷.

In May 2018 it was decided at a Government level that the procurement process should continue as planned. As the Government level decision was to continue the procurement process, in the knowledge that the updated budget model forecast total nominal subsidy payments of €1,814 million excluding VAT and contingency (or €2,176 million excluding VAT but including contingency), the latest May 2018 budget model has been taken to be the "Approval in Principle"²⁸ comparator for the purposes of the assessment of the final tender for the NBP contract, in accordance with the Public Spending Code (as described in section 3.1 above). However additional comparisons have also been included in the assessment, as further described in section 3.3.2 below.

This "Approval in Principle" position nevertheless remains subject to there being a Government decision on the overall budget for the Project.

Subsequent to the Government level decision in May 2018 to continue the procurement process, the Department extended the deployment period in the NBP contract from 5 years to 7 years.

As the May 2018 Budget Model (the "Approval in Principle") is based on a 5 year deployment, the Department prepared an estimate (not a fully developed budget cost model) of the potential impact that the extension of the deployment period might have on the subsidy requirement. This estimate also took into account a decision by the Department to re-profile the subsidy payments from Government so that a larger proportion of subsidy is invested in the first ten years of the contract.

The overall impact of these changes was a revised estimate of total nominal subsidy payments [REDACTED] excluding VAT and contingency (or [REDACTED] excluding VAT but including contingency). However this analysis is not as comprehensive a comparator as the May 2018 budget model.

The Department has recently revisited the Cost Benefit Analysis²⁹ for the Project to take account of the more recent information relating to costs and deployment timescales. This updated cost benefit analysis from PwC estimates, based on its central scenario, a positive real NPV of over €1.7bn over a 25 year period, with a Benefit to Cost ratio of 1.42. A sensitivity was also run by PwC based on the Bidders final tender solution which estimates a positive real NPV of over €1.14bn over a 25 year period, with a Benefit to Cost ratio of 1.24.

²⁷ Financial Model Reconciliation between September 2017 and March 2018, KPMG, May 2018

²⁸ As defined in the Public Spending Code

²⁹ Cost Benefit Analysis update by PwC, October 2018

3.3 Solution Assessment Methodology

3.3.1 Purpose

This Single Bidder Solution Assessment Report has been prepared by KPMG to inform the Department's assessment of whether it considers the final tender (i.e. solution) submitted by the Bidder to be an acceptable outcome for Government, by reference to the Public Spending Code.

The findings of this Single Bidder Solution Assessment Report, which is the output of the assessment process, should be considered by the Department in conjunction with the Department's internal consideration of other options.

3.3.2 Methodology

The assessment considers four dimensions, namely Cost, Quality, Risk and Time, by reference to a series of "indicators", with the conclusions providing an indication of whether the Bidder's Solution represents an acceptable outcome for Government. The key indicators are as follows.

Table 3.1: Assessment Indicators

Cost	Quality	Risk	Time
Total subsidy (including profile of subsidy)	Contracted coverage	Contract risk allocation – Ownership risks	Deployment timetable
Potential for subsidy increase over term	Contracted speeds	Contract risk allocation – Build risks	Risk of delay
Potential for subsidy decrease over term	Contract protections for service quality during contract period	Contract risk allocation – Access risks	
Project cost model comparisons	Compliance of solution	Contract risk allocation – Operating risks	
PFM assumptions comparison (including IRR)	Robustness of solution	Contract Governance	
Wholesale prices	Technical solution quality (evaluation scores)		
Infrastructure access agreement terms / prices	Commercial solution quality (evaluation scores)		
Subcontract terms / prices			
Funding plan terms			

The SAM examines these indicators in relation to the following factors, as applicable:

- Comparison to the May 2018 budget model (the "Approval in Principle");
- Comparison to industry benchmarks, where they are available and applicable;
- Comparison to the ISDS submissions in September 2017 (when there were two competing Bidders in the procurement);

- Comparison to the Bidder's RDS submission in June 2018;
- Risk borne by the Bidder / State, to the extent it has a bearing on the comparison;
- Contract terms, to the extent they have a bearing on the comparison; and
- Governance arrangements, to the extent they have a bearing on the comparison.

3.3.3 Report Structure

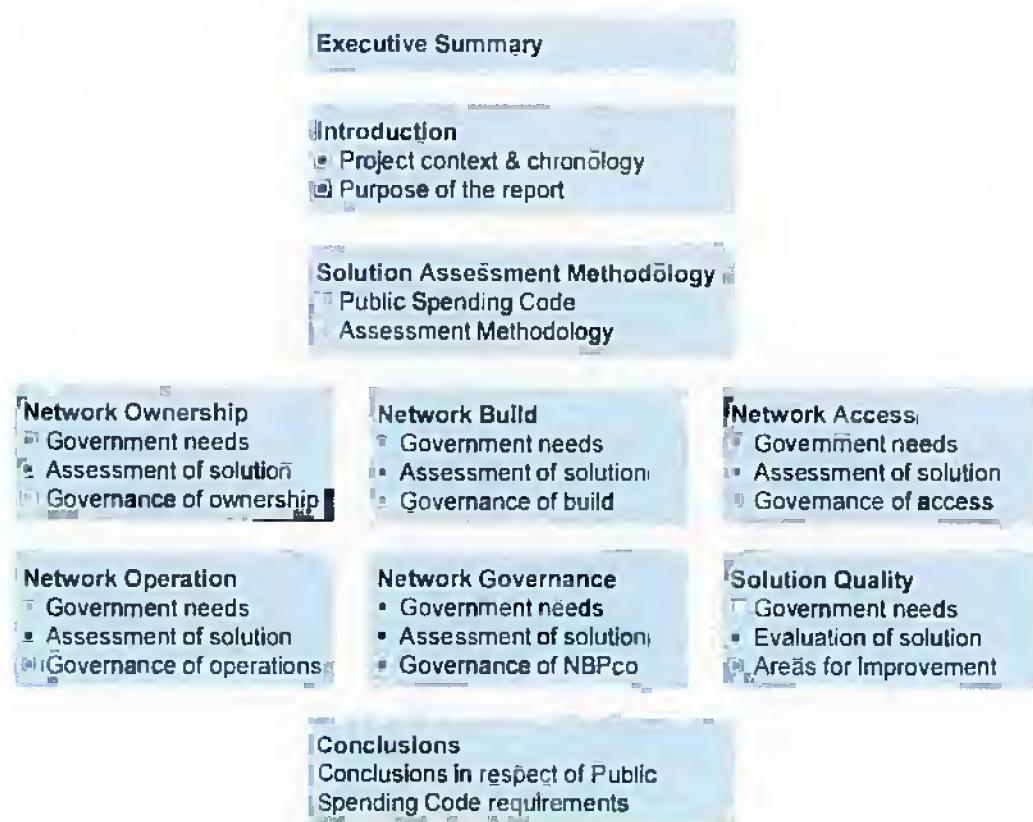
This Single Bidder Solution Assessment Report presents the findings of the SAM through the report structure shown in Figure 3.2 below, which provides the reader with an overall picture for each key element of the Project. The report then presents KPMG's overall conclusions on the Public Spending Code questions (section 3.3.1 above), based on the collective findings of these sections.

This Single Bidder Solution Assessment Report draws on the findings of an Analysys Mason report³⁰, the purpose of which is to provide technical and cost input to KPMG's report. In particular, the Analysys Mason report compares the actual cost in the Bidder's final tender with the budget cost included in the latest budget model (section 3.2). To support the cost comparison, the report assesses premises, network and resource volumes. Finally, to place the costs in context, the report provides an analysis comparing key input and output costs against industry benchmarks.

Mason Hayes & Curran have also prepared a separate short report which summarises the main terms of the NBP contract.

³⁰ Technical Solution Assessment Methodology Report, November 2018, Analysys Mason

Figure 3.2: Solution Assessment Report Structure



3.4 Lessons from the 2008 National Broadband Scheme

The Public Spending Code requires that all large capital projects are subjected to a post-project review³¹ to assess whether:

- The basis on which the project was undertaken proved correct;
- The expected benefits and outcomes materialised;
- The planned outcomes were the appropriate responses to actual public needs;
- The appraisal and management procedures adopted were satisfactory; and
- Conclusions can be drawn which are applicable to other projects, to the ongoing use of the asset, or to associated policies.

In November 2017 the Department completed its post-implementation review of the 2008 National Broadband Scheme (NBS)³². The NBS was a state funded initiative to provide a basic, affordable and scalable broadband services to over 235,000 premises in rural areas of Ireland using a comparatively low cost mobile technology platform.

³¹ Public Spending Code section C 02 (Monitoring Reports: Periodic Evaluation / Post-Project Review)

³² Post-Implementation Review of the National Broadband Scheme, Indecon, November 2017

The contract was awarded to Hutchinson 3G Ireland (now "Three") in December 2008, and involved the provision of circa €80m of subsidy (under the gap funding model) in return for the establishment and delivery of basic broadband services (i.e. typically less than 2 Mbps) to these premises between December 2008 and August 2014 (the end of the contract period).

The post-implementation review of the NBS sets out a number of lessons that are relevant to any consideration of the NBP solution, which are summarised below. To the extent relevant, they have informed thinking on the key provisions of the contractual and commercial structure underpinning the current NBP project.

Appropriateness of the Gap Funding Model

Indecon's conclusion (in terms of lessons for other projects) is that the gap funding model may or may not be appropriate for other projects, and that this should be evaluated on a case-by-case basis (by evaluating the costs and benefits of alternative options). For the NBP this assessment was undertaken at the Project Appraisal stage and has not been reconsidered again in this report. Indecon also concludes that, where the co-funded service provider retains ownership of infrastructure which has an economic value, this should result in a lower level of financial support from the State. The State's share of residual value of the NBP intervention is examined in section 7 of this report.

Projects where Needs are Changing

Indecon highlights that great care is required in the case of projects where the State is making an intervention in an economic sector where the needs of the target group are evolving and where there is potential competition from commercial operators (which is the case in the NBP). Indecon concludes that it is important in such cases to rigorously evaluate and test the underlying assumptions on demand. On the NBS the actual take-up of the service (58,000 premises) was substantially lower than the Bidder's forecast take-up (136,000 premises). Indecon states that consideration should be given to the potential impact of involvement of other operators either as a result of the intervention or due to market or technological developments. Where there is uncertainty on this issue this should be reflected in the design of the mechanism introduced. The development of the Intervention Strategy and the Intervention Map is outlined in Section 2 and then take-up risk is considered in sections 5 and 7 of this report.

Effectiveness of the Use of Reverse Payments

Indecon concludes that the use of a reverse payment mechanism (i.e. clawback) is appropriate where there is the possibility that demand may be greater than anticipated and where, as a result, the level of subsidy provided may ultimately prove to be excessive. Such a reverse payment mechanism should be considered for all projects where returns to the supplier could be greater than assumed. This is examined in section 7 of this report.

Section 4.3 examines the ownership and contractual solution proposed by the remaining Bidder in response to these requirements.

Section 4.4 examines the evolution of the Bidder's commercial solution from its ISDS submission to RDS and ISFT.

Section 4.5 examines the Bidders commercial solution to fund the project and its returns in its Final Tender.

Section 4.5 describes the governance protections related to the Bidder's commercial solution within the NBP contract, and considers the level of protection that these arrangements provide the State.

Section 4.7 sets out our conclusion on the "network ownership and commercial solution" element of the Project, taking account of the findings presented in sections 4.3 to 4.7.

4.2 Ownership and Contractual Structure

4.2.1 Ownership model required

In 2015 the Department commissioned KPMG to prepare a report examining the ownership options for delivering the State-led intervention. KPMG's report³³ forms a key element of the National Broadband Plan Intervention Strategy, which was the subject of a public consultation process that commenced in July 2015 and concluded with a Government decision in December 2015.

The Government's decision was to take the following two options into the procurement process for the state-led intervention, with a final decision on the preferred ownership option to be taken once further consideration had been given to these ownership options and once the level of market interest in each option was known:

- Option 1: Private sector build, finance, own, maintain and operate with obligations (commercial stimulus / gap funding model); and
- Option 2: Private sector build, finance, maintain and operate with asset reversion (full concession model).

In January 2016 the Department set up a Sub-Group to discuss and consider these options in more detail. The Department prepared a report for Government setting out its further consideration of the two ownership options, informed by the deliberations of the Sub-Group and the conclusions of the KPMG report. The Department's report recommended the commercial stimulus / gap funding model.

³³ Ownership Report, National Broadband Intervention Strategy, KPMG, December 2015

In July 2016 the Government decided to select the commercial stimulus / gap funding model as its preferred option for the state-led intervention.

As stated in section 2.4, this Single Bidder Solution Assessment Report has been prepared by KPMG to inform the Department's assessment of whether it considers the final tender (i.e. solution) submitted by the Bidder to be an acceptable outcome for Government, by reference to the Public Spending Code.

The subject matter and conclusions of the aforementioned ownership reports and decision are not being addressed again in this report.

4.2.2 Contractual requirements

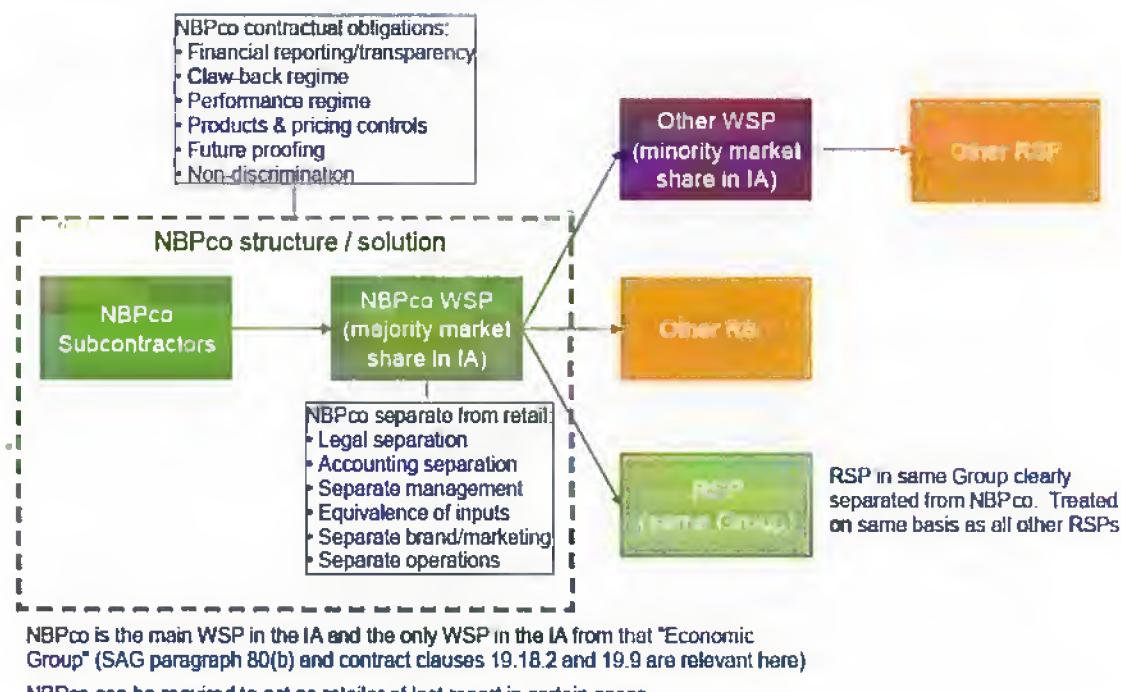
The contract for the state-led intervention was based, in the first instance, on the template contract used by Broadband Delivery UK (BDUK) for the delivery of the UK's National Broadband Scheme, which also utilised the gap funding model and received state aid approval in 2012.

To this template contract the Department (together with its' advisers) has added additional requirements and protections, consistent with the National Broadband Plan Intervention Strategy³⁴, with the resulting NBP contract then being further refined through the competitive dialogue procurement process. See section 2 in this regard.

One of the most significant requirements of the contract with respect to "network ownership" is that the entity responsible for establishing and operating the wholesale broadband network is intended to be a separate legal entity ("NBPco"), which is independent of any existing wholesale operator. This is shown in Figure 4.1 below. This was a key requirement to ensure compliance with relevant State Aid provisions.

³⁴ Governance Report, National Broadband Intervention Strategy, KPMG, December 2015

Figure 4.1 Contractual requirements for NBPco



The Department's strategy in this respect is for NBPco to be the main provider of wholesale services in the Intervention Area (consistent with the market failure that necessitated the state-led intervention in the first instance, and thereby protecting the commercial viability and sustainability of the intervention being undertaken by NBPco), with additional provisions included in the contract to apply to both NBPco and its key subcontractors to ensure the State Aid Guidelines (SAG) are adhered to, including requirements for:

- Appropriate use of public subsidy (in line with specific requirements in the contract);
- Full financial transparency in respect of network build and operation; and
- Claw back of subsidy in respect of any financial gains that were not anticipated at the time the final tender was submitted.

The Department's requirements also addressed the potential risk of discrimination by a vertically integrated operator where there may be a conflict of interest between its wholesale retail divisions and the need to mitigate any potential adverse impact on market competition arising from an already dominant supplier winning the tender process. The contract requires a range of measures / safeguards to separate the wholesale operations in the IA from retail services (consistent with SAG), including:

- Accounting separation;
- Legal separation;
- Separation of management and management incentives;

- Equivalence of inputs; and
- Separate marketing and branding.

In addition to the requirement for a separate legal entity which will have a requirement for Minister board level representation, the final tender contract also includes other requirements and protections in respect of “network ownership”, such as delay payments and performance credits, Claw back, and ownership of NBPco / NBPco assets.

4.3 Bidder's Ownership and Contractual Solution

4.3.1 Solution overview

An overview of the Bidder's proposed structure, as provided by the Bidder in its ISFT submission, is set out in the figure below. Further details on the structure of build and operations are included in sections 5 and 7 of this report.



4.3.2 Key principles

A series of seven horizontal black bars of varying lengths, each ending in a jagged, stepped pattern. The bars are arranged vertically, with the first four being of equal length and the last three being progressively shorter. The bars are set against a white background.

- In addition to the shareholder loan and equity subscription agreements it is proposed that there will be a Direct Agreement between the Department and each Key Subcontractor identified in the Bidders solution. The Direct Agreement makes provision for a collateral warranty and a right to require novation of the Key Subcontract to the Department or its nominee in certain cases. The tender process

provides that Key Subcontractors that relied upon third party resources as part of their Pre-Qualification submissions will also be required to provide a guarantee from that third party for its obligations at Contract Award.

- The following table sets out the list of proposed Key Subcontractors, their proposed role under the contract and whether, according to the Bidder, a third party guarantee should be provided, based on what was set out in the Bidder's Pre-Qualification submission:

Table 4.1 Key Subcontractors

Key Subcontractor	Role	
Buildco (new special purpose vehicle)	■ of the deployment build	
Elr	Provider of circa ■ of the third party Infrastructure through a long term Infrastructure Access Agreement	
Actavo (Ireland) Limited	Subcontractor to Buildco for deployment and NBPco for connections	
Kelly Comms Ltd	Subcontractor to Buildco for deployment and NBPco for connections	

Key Subcontractor	Role	
KN Networks (Ire) Limited	Subcontractor to Buildco for deployment and NBPco for connections	
Nokia UK Limited	Subcontractor to NBPco in relation to maintenance of active equipment	
eNet	Subcontractor to NBPco for [REDACTED] of deployment, operations related to the NOC and the provision of [REDACTED] of the third party Infrastructure	

Source: DCCAE clarification response to Bidder on 17 September 2018

- During the financial evaluation of the tender, a need to clarify how Buildco is funded and the level of security proposed to be provided was identified. Paragraph 25 of the [REDACTED] describes the security package expected to be provided to NBPco by Buildco.

- The most recent PQQ evaluation report, provided in August 2018, assessed the Bidder's shareholding entities based on their financial statements at the date of the original pre-qualification submission. In line with best practice given the passage of time, this should be updated again prior to contract award in case the financial strength of these entities has changed.

[REDACTED]
 Hence it is recommended that the financial evaluation undertaken at PQQ is updated to address these points prior to contract award.

Action (Pre-Contract Award): Contract

- An updated assessment of the capacity of each entity to meet its obligations based on most recent financial information and the most recent structure of NBPco and its various parties to be re-assessed in advance of Contract Award.
- Department to ensure that performance bonds, guarantees and other forms of security as set out in Table 4.1 are provided where they are required from third parties for contractual obligations.

4.3.2.1 Flow down of risk

The following table sets out the key financial risks of the project and the proposed entity responsible for each risk under the Bidders contractual structure. This risk allocation is subject to Contract Assumptions, which are described in sections 4.4.2, 5.4.3 and 7.5.4 of this report.

Table 4.2 Financial risks

Risk	Proposed Risk allocation	Subcontracts	Contract Assumptions
Higher than projected build costs	Buildco price contract supported by security set out in Table 4.1	Buildco proposes to subcontract the majority of the build to Key Subcontractors	Buildco will be responsible for the majority of the build costs
Cost/penalties of build delays	Buildco, Flow downs for delay penalties to Buildco	Buildco proposes to flow down a portion of the costs/penalties to Key Subcontractors	Buildco will be responsible for the majority of the build costs
Higher than projected operating expenditure	NBPco	NBPco proposed to be subcontracted to eNet, Nokia, KN Network Services (Ire) Limited, Kelly Comms Limited, Actavo (Ireland) Limited and Secto Services Limited who will share operational cost risk	NBPco will be responsible for the majority of the operating expenditure
Higher than projected infrastructure rental costs	NBPco	Long term Infrastructure Access Agreements	NBPco will be responsible for the majority of the infrastructure rental costs

Risk	Proposed Risk allocation	Subcontracts	Other
Lower take up/revenues	NBPco	n/a	<input checked="" type="checkbox"/>
Lower product pricing	NBPco	n/a	<input checked="" type="checkbox"/>
Lower than predicted terminal value	NBPco	n/a	<input checked="" type="checkbox"/>
Higher Inflation, interest rates, taxation	NBPco (Connection cost inflation risk proposed to be offset through CMPs which are subject to inflation)	n/a	<input checked="" type="checkbox"/>
Change in law (CIL)	NBPco (Qualifying CIL proposed to apply where NBPco is discriminated against which is subject to compensation)	n/a	<input checked="" type="checkbox"/>
Encroachment into the Intervention Area	NBPco (Compensation is proposed for encroachment into the Intervention area by other operators during deployment up to [redacted] of total base subsidy payments)	n/a	<input checked="" type="checkbox"/>

Source: KPMG analysis

4.3.2.2 Key financial benefits

The following table sets out the key financial benefits estimated under the contract and the entity where they are proposed to accrue. This risk allocation is subject to Contract Assumptions, which are described in sections 4.4.2, 5.4.3 and 7.5.4 of this report.

Table 4.3 Financial benefits

Allocation of key financial benefits (excluding Contract Assumptions)	Proposed Allocation Department: Bidder	Proposed Protection to DCCAE	
Lower than projected build costs	[REDACTED]	Deployment Clawback with NBPco and Buildco	[REDACTED]
Build and/or take-up is faster than planned	[REDACTED]	IRR Clawback	[REDACTED]
Lower than projected operating expenditure	[REDACTED]	IRR Clawback	[REDACTED]
Lower than projected Infrastructure rental costs	[REDACTED]	IRR Clawback	[REDACTED]
Higher take up/revenues	[REDACTED]	IRR Clawback	
Higher product pricing	[REDACTED]	IRR Clawback	
Higher than predicted terminal value	[REDACTED]	Terminal Value Clawback	

Source: KPMG analysis

- The National Broadband Plan involves NBPco rolling out high speed broadband to approximately 536,000 premises across Ireland. This involves a significant capital spend up front. If this was a commercial project it would be likely that a commercial

operator would deploy on gradual basis at a much smaller scale, testing the market as it rolled out and adjusting its deployment plan accordingly. The NBP Contract does not provide for such an approach given the policy objective to pass and connect 100% of premises. This may well have been a factor in the approach adopted by the Bidder in formulating its tender. Further details on the assumptions applied are included in sections 5 and 7 of this report.

- While NBPco will benefit over the contract life if it outperforms its projections and/or key assumptions, there are three important contractual mechanisms in the contract that are intended, if implemented appropriately, to enable the Department to share in these benefits. These are:
 - Deployment Clawback (see section 5.4.4);
 - IRR Clawback (see section 7.5.5); and
 - Terminal Value Clawback (see section 7.5.6).
- Given the Bidder's subsidy forecast is above the Departments budget model subsidy forecast, it emphasises the importance of an appropriately skilled team being available to implement and oversee the contract on the part of the Department to allow government to secure any applicable clawback that it may be due over the life of the Contract should the actual outturn revenues and costs prove to outperform the final tender projections. The claw back mechanisms in the contract are intended to return subsidy to the State in such event. It is also structured to gradually reduce the NBPco share of profits as profits increase from the project.

4.4 Evolution of Commercial Solution and Pricing

4.4.1 Invitation to Submit Detailed Solutions ('ISDS')

In September 2017 the two Bidder's remaining in the procurement at that time submitted their response to the Invitation to Submit Detailed Solutions. In these ISDS submissions the Bidders set out their initial Subsidy Payment requirements. Table 4.4 below provides a summary of the two Bidders' Subsidy Payment requirements at that time in nominal and net present cost terms. It is important to note that these Subsidy Payments were submitted at a time when there was competition in the procurement.

Table 4.4 Total Subsidy Payments at ISDS

Total Subvention (nominal terms)	eir		GMC	
	€m	%	€m	%
Deployment Milestone Payments (DMP's)				
Connection Milestone Payments (CMP's)				
Ongoing Capital Payments (OCP's)				
Total Subvention (nominal terms)				
NPV of total Subvention				

Data Source: Bidders' ISDS Financial Models

As can be seen, there was a [REDACTED] difference in eir and GMC's total nominal Subsidy Payments at that point.

While the Subsidy Payment requirements were similar, [REDACTED]

GMC also proposed a project finance solution which involved the following key features:

- An equity subscription [REDACTED]
- Senior debt of up to [REDACTED] to be provided by a number of commercial banks, multilaterals and sovereign wealth funds. The debt facilities' all in annual interest rates varied [REDACTED].

4.4.2 Post ISDS dialogue

Dialogue continued with both eir and GMC post their ISDS submissions with a view to refining the Contract further and securing further reductions in the Subsidy Payment requirement. Both Bidders submitted key issues with the Contract which the Department sought to address through Dialogue within the constraints of the procurement rules, State Aid requirements and the objectives of the National Broadband Plan. This also included the development of the Contract Assumptions described in section 5 and 7 of this report. The Department made progress on the majority of the key contract issues with both Bidders during November and December of 2017. However, in January 2018, eir announced to the Department and publicly that it was withdrawing from the procurement. Further details on its withdrawal are set out in section 2.3 of this report.

4.4.3 Refined Detailed Solutions ('RDS')

Volume 1 of the ISDS stated that the Department may (but was not obliged to) introduce a Refined Detailed Solutions (RDS) stage if, for example, the Department considered that it had not found in the Detailed Solutions, a Solution or Solutions (if necessary after comparing and clarifying them) that, in principle, was capable of satisfying its requirements for the State-led intervention.

On 5th March 2018 the Department notified GMC that it intended to exercise the option to include a RDS stage in the procurement process as provided for in the ISDS.

Dialogue continued with GMC from February 2018 with a view to addressing key contract "Red Flag" issues previously raised by the Bidder. At the same time given the change to a single bidder situation, the Department, with its advisers, completed a project re-appraisal which concluded that continuing with this process was still the optimal course of action. The Invitation to Submit Refined Detailed Solutions was issued to the Bidder on 31st May requiring GMC to submit a Refined Detailed Solution

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for each element of its Solution. These submissions were provided to the Department in June and July of 2018.

Through dialogue on the various cost and revenue elements of the Bidder's Refined Detailed Solution it became evident that GMC was projecting a Subsidy Payment requirement considerably higher than the Department's Budget Model.



On 6 July 2018 the Department met with the Bidder to discuss through dialogue its proposed financial solution and Project Financial Model summary. In this meeting the Bidder presented an overview of its latest financial proposals.

The Department and its advisers analysed the proposals from the Bidder which involved a request for:



On the basis of these increased risks, it was decided by the Department that the structure proposed by the Bidder would be unlikely to offer a solution that would maximise value for the State. The Department and its advisers instead proposed a refinement to the deal structure (as permitted within the tender competition rules) to reflect the following:

- Within the existing 25 year contract term, the Department would now require a test to check for viability, at year 10 and during deployment, where the assets could revert to the State if NBPco required further subsidy payments beyond those agreed at Contract Award (see sections 5 and 7). In addition the contract would now provide for NBPco to commit to continuing to provide high speed broadband for at least 10 years after the contract term otherwise the assets would revert to the State.
- Subsidy Payments would now be profiled so that the majority of subsidy is to be paid during deployment through Deployment Milestone Payments ('DMPs') and Ongoing Capital Payments ('OCPs') up to year 10 (i.e. the proportion to be paid through OCPs is significantly reduced). By bringing the subsidy forward, and

reducing the level of OCPs, it would significantly reduce the amount of private finance required and reduce the additional costs of such finance to the project.

- The Department proposed to include a mechanism whereby adverse variations in design assumptions between final tender stage and detailed design stage for each Deployment Area would be addressed through a set of Contract Assumptions and a contingent subsidy to deal with risks that would not normally be borne by a commercial operator (set out in section 5 and 7) that had already been discussed in dialogue. This was to recognise that it is only at the M1 Milestone stage (i.e. some months after the contract is signed) that NBPco is able to prepare its detailed design for each Deployment Area, informed by detailed surveys of planned routes and infrastructure in that Deployment Area.
- The Department proposed to allow NBPco a contingent subsidy payment to allow for potential adverse cost variations between the M1 Milestone and M2 (Deployment Area Complete) Milestone for each Deployment Area, where and to the extent such adverse cost variations result from issues that could not reasonably have been identified or addressed by NBPco at detailed design stage [REDACTED] as set out in section 5 of this report.
- The Department also proposed to increase its clawback protections in the event that actual revenues are higher, or actual operating costs are lower, than the levels assumed by the Bidder in its final tender. In addition the operator of NBPco would be subject to benchmarking and market testing.
- In the event that debt finance was no longer to be used, based on the above refinements, it was proposed that should NBPco raise debt finance during the life of the contract based on Department approval, then the contract would provide that Department would share in the benefits of such a financing through the clawback mechanisms.

Following further detailed dialogue with the Bidder through August and September the Bidder agreed to proceed on the basis of the principles set out. These principles were either incorporated by agreement into the actual contract pre tender or included in an Addendum to the contract for update at Preferred Bidder. The Department indicated clearly that the expectation was that the updated structure would result in both further reductions to the base Subsidy Payments when compared to the backstop RDS submission proposed by the Bidder and a reduction in the Bidder's IRR requirement as part of their Final Tender.

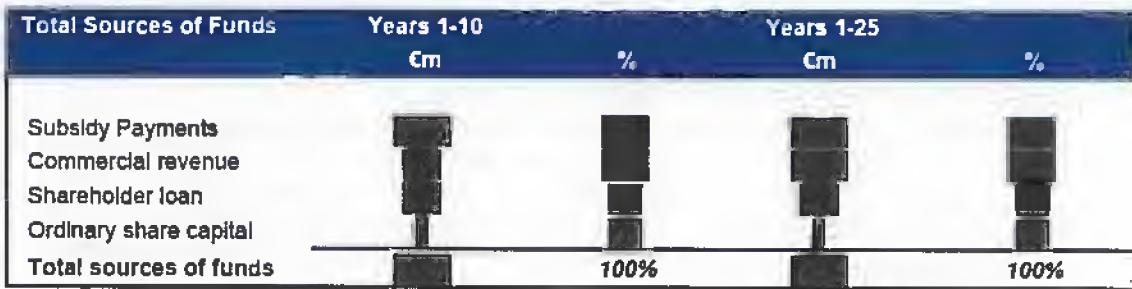
4.5 Commercial Solution - ISFT

In September 2018 the Bidder submitted its Final Tender solution for the National Broadband Plan project. In it the Bidder set out how its proposed solution was to be funded by a combination of private sector funding, provided by the Bidder, commercial revenues and government subsidy. This section sets out the funding requirements of the Bidder along with the projected profits and returns required.

4.5.1 Sources & Uses of Funds

The sources of funds forecasted by the Bidder (in nominal terms excluding VAT) for the first 10 years of the contract and the full 25 year contract can be summarised as follows. This excludes the conditional subsidy for Contract Assumptions, for which there was no cost identified at final tender stage:

Table 4.5 Sources of Funds

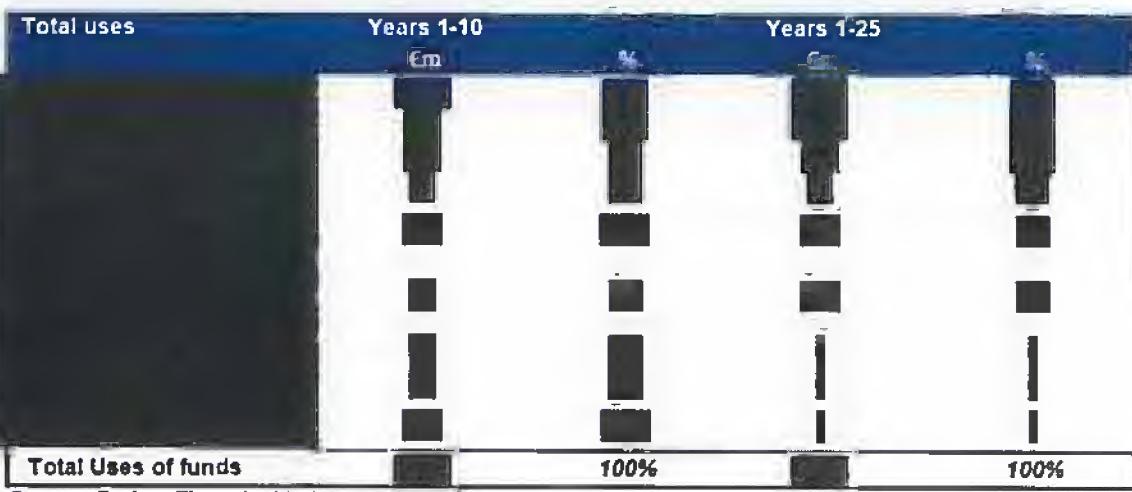


Source: Project Financial Model

- Total required subsidies represent [REDACTED] of the total sources of funds over the 25 year period ([REDACTED] over the first 10 years).
- Projected commercial revenue accounts for [REDACTED] of total sources of funds over the 25 year period ([REDACTED] over the first 10 years).
- The shareholder loan and ordinary share capital represent [REDACTED] of total sources of funds over the 25 year period ([REDACTED] over the first 10 years).

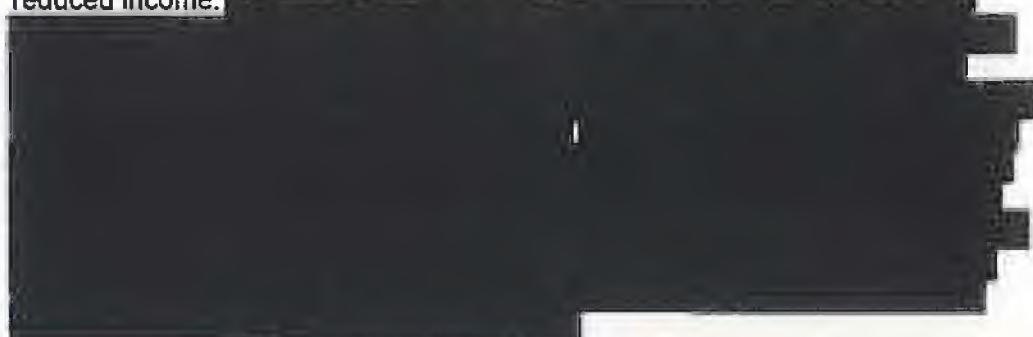
The projected uses of funds (in nominal terms excluding VAT) as submitted by the Bidder for the first 10 years of the contract and the full 25 year contract are summarised below. Further analysis of these costs are provided in section 5 and 7 of this report as well as the KPMG financial robustness evaluation report.

Table 4.6 Uses of Funds



Source: Project Financial Model

- Forecast operating expenditure (including infrastructure rentals) represents the largest proportion of uses of funds over the 25 year contract (█████) with capital expenditure being the most significant use of funds over the first 10 years (█████) of the contract as the Bidder completes deployment of the network. This is considered further in Section 7.
- Other than operating expenditure and capital expenditure, █████ represents the largest use of funds over 25 years █████.
- From year 12 onwards, the Bidder retains a relatively modest amount of cash (█████) on its Balance Sheet as a buffer against unexpected additional expenditure or reduced income.



4.5.2 Subsidy Payments

4.5.2.1 Base Subsidy Payments

The Subsidy Payments are the means by which NBPco is paid for the deployment, connection and operations of high speed broadband over the 25 year contract. They have been developed in detail in schedule 5.1 of the Contract.

The Subsidy Payments are structured into the following payments:

- Deployment Milestone Payments ('DMPs') – payable upon achievement of certain network deployment milestones over the network deployment period for incurring permitted expenditure for passing premises;
- Connection Milestone Payments ('CMPs') – payable upon achievement of connection milestones over the contract period. These are payments of capital related subsidy in respect of the permitted expenditure incurred by NBPco in the implementation of the network to incentivise NBPco to achieve connection milestones;

- Ongoing Capital Payments ('OCPs') – deferred deployment payments paid over the first 10 years of the Contract linked to performance requirements for the early stages of operations.

Subsidy Payments are subject to deductions if Key Performance Indicators ('KPIs') are not achieved. These are set out in schedule 6.7 of the Contract.

4.5.2.2 *Conditional Subsidy Payments*

In addition to the Subsidy Payments set out above, the Contract includes a number of conditional Subsidy Payments that are linked to Contract Assumptions and risk share mechanisms set out below.

The contract provides for the conditional Subsidy Payments to be structured as follows:

- Deployment Subsidy for build related Contract Assumptions – these are conditional subsidy payments that NBPco can draw down if it incurs additional costs to those specified in its Project Cost Model in relation to Build Related Contract Assumptions and that fulfil the requirements set out in schedule 6.2 Annex 5 of the Contract. These Contract Assumptions are explained in section 5 of this report. The total effect of any changes in these Contract Assumptions that result in increased subsidy are set at a maximum level under the contract of [REDACTED]
- [REDACTED]
- Post deployment subsidy for build related Contract Assumptions - these are conditional subsidy payments that NBPco can draw down on if it incurs additional costs to those specified in its Project Cost Model in relation to post deployment related Contract Assumptions and that fulfil the requirements set out in schedule 6.2 Annex 5 of the Contract. These Contract Assumptions are explained in section 7 of this report. The total effect of any changes in these Contract Assumptions that result in increased subsidy are set at a maximum level under the contract of [REDACTED]
- Conditional connection subsidy – additional Connection Milestone Payments are set out in schedule 5.1 of the Contract. This allows the Bidder to claim additional connection payments if the actual average cost of connections to be paid by the Department is more than the standard Connection Milestone Payment. If the actual average cost of connections to be paid by the Department is less than the standard Connection Milestone Payment then the Department will reduce its Connection Milestone Payments by [REDACTED] of the difference. If the actual average cost of connections to be paid by the Department is more than the standard Connection Milestone Payment then the Department will increase its Connection Milestone Payments by [REDACTED] of the difference, up to a total cap of [REDACTED].

4.5.2.3 Bidder Subsidy Payments

The table below summarises the total Subsidy Payments excluding VAT required by the Bidder over the first 10 years and over the 25 year term of the contract (in nominal, real (excluding inflation) and net present value 'NPV' terms).

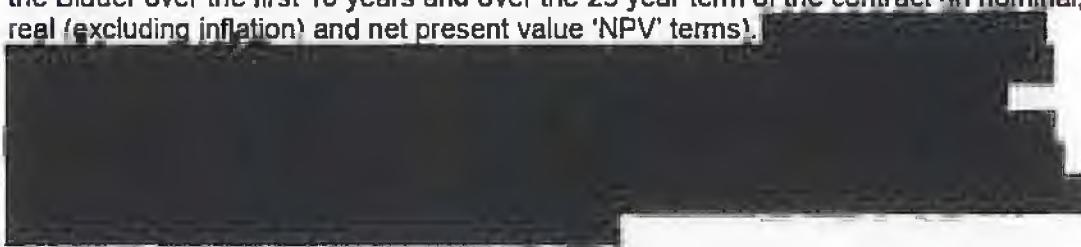


Table 4.7 Subsidy breakdown (Excluding VAT)

	Years 1-10	Years 1-25		
	Cm	%	Cm	%
Base Subsidy amounts				
Deployment Milestone Payments	██████████	██████████	██████████	██████████
Ongoing Capital Payments	██████████	██████████	██████████	██████████
Connection Milestone Payments	██████████	██████████	██████████	██████████
Total Subsidy Payments (nominal terms)	██████████	██████████	██████████	██████████
% of total subsidy	██████████	██████████	██████████	██████████
Total Subsidy Payments (real terms)³⁵	██████████	██████████	██████████	██████████
Conditional Subsidy amounts				
Deployment Subsidy for Build Related Contract Assumptions	██████████	██████████	██████████	██████████
Exceptional Subsidy	██████████	██████████	██████████	██████████
Post Deployment Subsidy for Build Related Contract Assumptions	██████████	██████████	██████████	██████████
Conditional Connection Subsidy	██████████	██████████	██████████	██████████
Total Conditional Subsidy (In nominal terms)	██████████	██████████	██████████	██████████
Total Subvention (nominal terms)	██████████	██████████	██████████	██████████
Including conditional amounts	██████████	██████████	██████████	██████████
Total Subvention (real terms)	██████████	██████████	██████████	██████████
Including conditional amounts	██████████	██████████	██████████	██████████
Total NPV of Subvention including conditional amounts	██████████	██████████	██████████	██████████

Source: Project Financial Model

Excluding the conditional subsidy amounts (which are only payable under the terms of the contract if NBPco can demonstrate that it has incurred additional expenditure above its base case assumptions due to circumstances which are specifically provided for in the Contract), █████ of Subsidy Payments are expected to be paid out by the end of year 10. The front loading of subsidy in this manner is required in order to

³⁵ Please note that inflation applies to CMPs only. The difference between nominal total subsidy payments and real total subsidy payments is inflation applied to CMPs.

reduce the requirement for private finance and to facilitate the viability review option at year 10.

The contract also allows for an IA Reduction Subsidy Increase Cap. This allowance is for up to [REDACTED] in additional subsidy in the event that the Intervention Area reduced below 536,000 premises as a result of other commercial deployments. The Bidder would have to demonstrate a loss as a result of such a reduction and would be entitled to compensation up to [REDACTED] of the Total Subsidy Payments in accordance with Schedule 6.2 of the contract. This equates to [REDACTED] in Nominal Terms.

The following table compares the Final Tender Subsidy amounts (excluding conditional subsidy amounts) with those of the March 2018 Budget Model.

Table 4.8 Total Subsidy Payments

Nominal Subsidy Payments (Cm)	Years 1-10			Years 1-25		
	GMC	Budget Model	Diff	GMC	Budget Model	Diff
Deployment Milestone Payments	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Ongoing Capital Payments	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Connection Milestone Payments	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total Subsidy Payments	85%	54%		€2,143	€1,814	
Y1-10 as a % of total subsidy	85%	54%		€2,143	€1,814	

Source: Project Financial Model and Budget Model (March 2018)

The Budget Model was prepared prior to the RDS revisions to increase the payment of subsidy in the early years. As evident from the table [REDACTED]

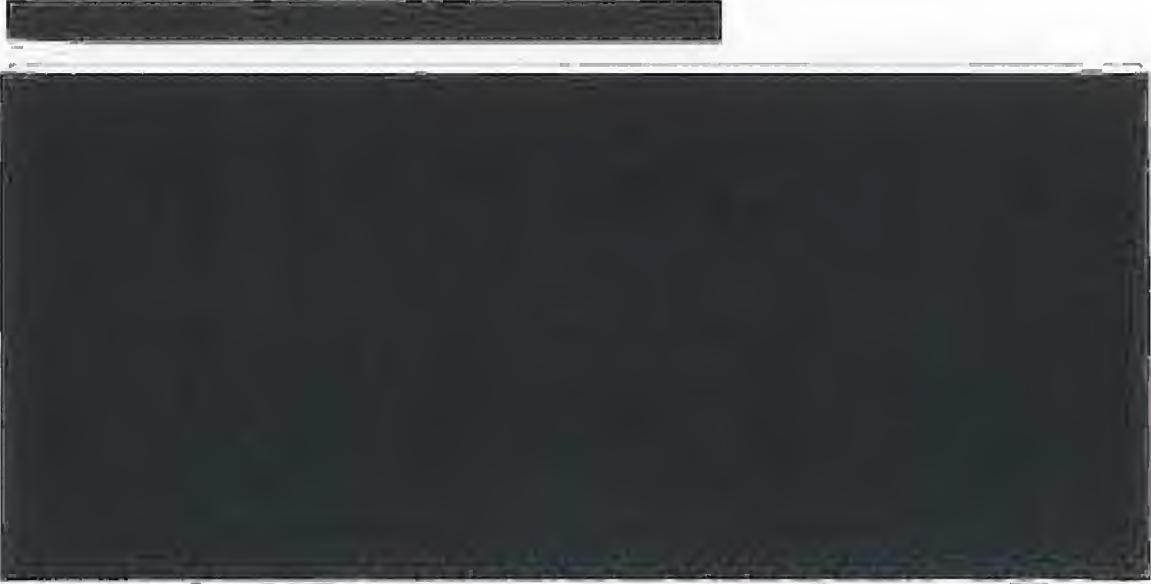
[REDACTED] in addition the OCPs in the GMC model are all incurred between years 1-10, relative to the Budget Model where only c. 30% of OCPs were received in the first 10 years and the remainder were earned over the final 15 years of the Contract Period.

[REDACTED] reduces the total nominal amount required in order for the Bidder to fund deployment and achieve its commercial rate of return and facilitates the Contract changes including the viability test at the end of the tenth year of the Contract (at which stage the contract provide that the Minister may take ownership of the NBPco network in certain circumstances).

While the Bidder has forecast [REDACTED] fewer first time connections than the Budget Model by the end of year 10, the Bidder has proposed a higher CMP per premise value (in real terms). These factors (combined with different connection timings and therefore indexation of CMPs) offset such that, by the end of contract year 10, the CMPs in the Bidder's model are the same as those in the Budget Model. By year 25, the Bidder's total CMPs are higher than those in the Budget Model due to the higher CMP per premise value (in real terms) and a higher number of first time connections [REDACTED]

Please note that the Contract Assumptions set out in section 4.4.1.1 had not been devised when the Budget Model was developed and therefore the Budget Model does not contain conditional subsidy amounts. The Contract Assumptions were devised to reduce the likelihood of the Bidder including additional contingency amounts (beyond the levels set out in section 4.5) in the calculation of base Subsidy Payments for the risks associated with the Contract Assumptions (most of which extend far into the future and are subject to variability beyond the Bidder's control). The Budget Model did not include sufficient contingency allowances (in comparison to the amount deemed necessary by the Bidder) for the risks associated with the Contract Assumptions. Hence the Budget Model Subsidy Payment amounts presented in the table above would increase if any of the risks associated with the Contract Assumptions were to materialise.

In accordance with Schedule 5.1 of the Contract, the net present value ("NPV") of the Bidder's total Subsidy Payments is forecast to be less than the NPV of cumulative Permitted Expenditure at all points during the contract period. This is shown below.



Action (Pre-Contract Award): PCM and PFM

Pre contract award the Department should confirm with the Bidder that its contract award financial model should reflect that:

- Total Subsidy Payments DMPs + CMPs + ACMPs cannot exceed the maximums discussed of €1,800m by year 10 and €2,125m by year 25 ; and
- The 10 year nominal blended equity IRR (post SPV tax but before recipient tax) cannot exceed the maximums discussed

4.5.3 Commercial Revenues

As set out in the sources and uses of funds, NBPco is reliant on commercial revenues to part fund the deployment and operations of the project. It is commercially incentivised to stimulate demand in order to (as a minimum) secure the level of revenue forecast in its bid. It is also incentivised to exceed this take up level through their share of the additional profits generated after clawback.

Revenue projected by the bidder over the first 10 years of the contract and over the 25 year contract is considered in more detail in Section 7.

4.5.4 Bidder Funding

4.5.4.1 *Equity and shareholder loan*

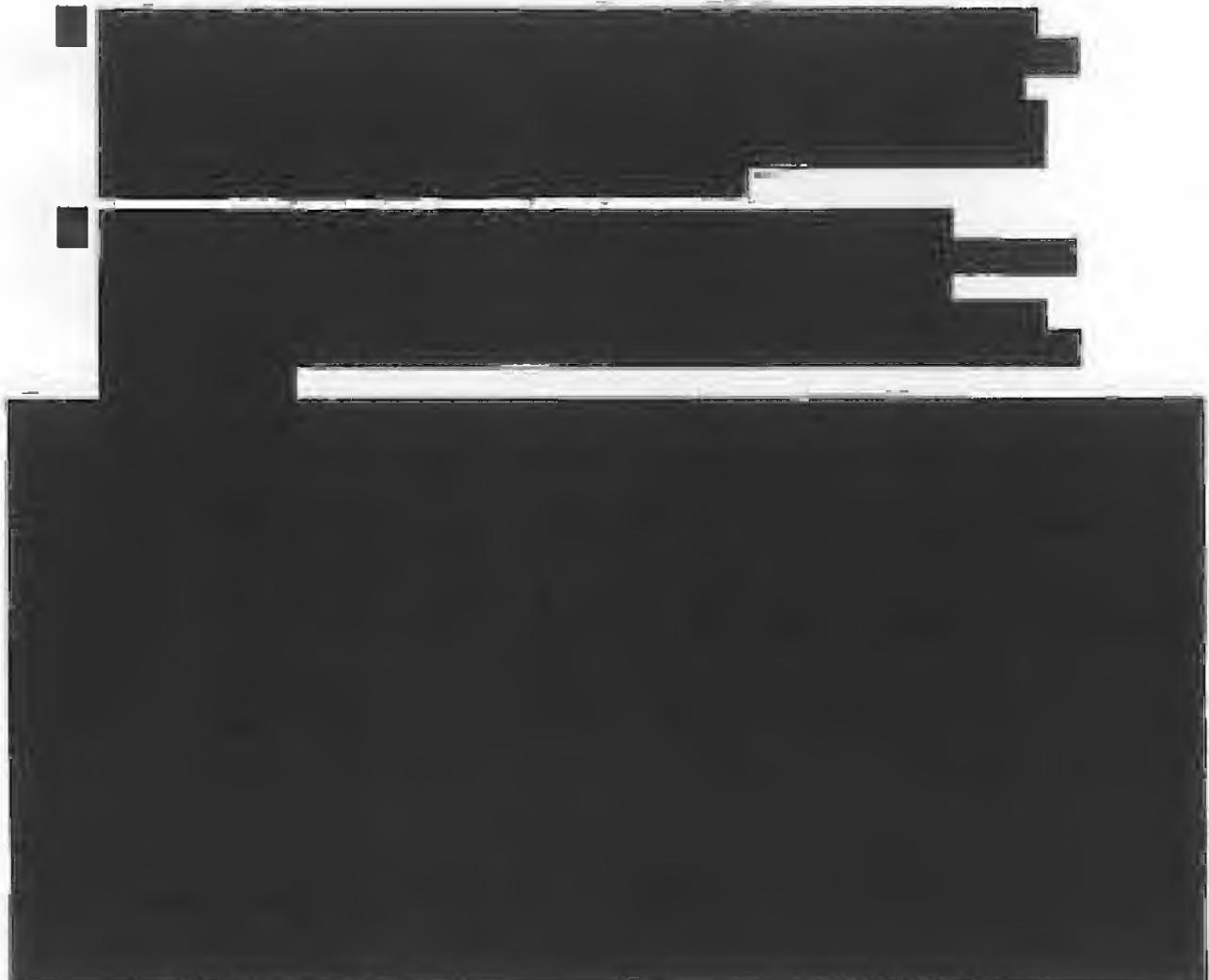
- The Bidder is proposing to provide [REDACTED] of the funding required for first 10 years and [REDACTED] of the funding requirement for the full 25 years (prior to utilisation, if any, of the conditional Subsidy amounts).

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



4.5.4.2 *Equity IRR*

- The nominal blended equity IRR (post SPV tax but pre recipient tax) targeted by the Bidder [REDACTED] KPMG has provided an IRR benchmark report relevant to this project which is appended to the Financial Evaluation Report. This sets out IRRs for broadly comparable investments in the range of [REDACTED] for projects of this nature. This level of return required by NBPco is within the benchmarks observed.
- [REDACTED]



It should be noted that the contract (if implemented appropriately) provides for the Department to share in the benefits of any commercial upside through Deployment, IRR and Terminal Value Clawback (see sections 5 and 7).

The bidder has also undertaken a range of sensitivity analysis as part of its Final Tender. The output of this has been assessed in the separate robustness evaluation of the Tender submitted.

4.6 Governance Protections Related to the Bidders Commercial Solution

As set out throughout this report, the governance of the contract will be critical in ensuring that NBPco complies with its obligations under the Contract and that the Department is in a position to recover subsidy in the event of over-performance. The Department will need an appropriately resourced team to monitor this.

The Department will require strong governance over the contract terms to ensure that:

- The total Subsidy Payments are paid in line with the contract provisions which include that Subsidy Payments must be less than the total permitted expenditure actually incurred by NBPco;
- DCCAE receives the level of clawback provided for in the contract in the event that savings are made when compared to assumptions used by the Bidder in its final tender; and
- Services can continue to be provided in the event that, at any stage of the contract, NBPco is unable or unwilling to do so.

4.6.1 Governance of Ownership

Under the Gap Funding model the shareholders of NBPco have the right to retain ownership of the company and its assets during and following the commencement of the contract. In the refinements made to the structure of the project, this principle still applies. However, in the event that the Bidder requires further subsidy at two checkpoints during deployment or at the end of year 10 to fund the remaining life of the Contract then the Department has the ability to take ownership of NBPco or its assets based on the regime set out in section 4.6.2. In addition, if it is unable to enter into a 10 year commitment agreement post Contract award the contract (if implemented appropriately) provides the right for the Department to take ownership of NBPco or its assets. These mechanisms are described in section 5 and 7 of this report.

Where the Department terminates the contract (based on the grounds set out in the contract) at any of these checkpoints, contract provides for termination payments to be made to the Shareholders of NBPco as set out in section 4.6.2.

4.6.2 Consequence of Termination

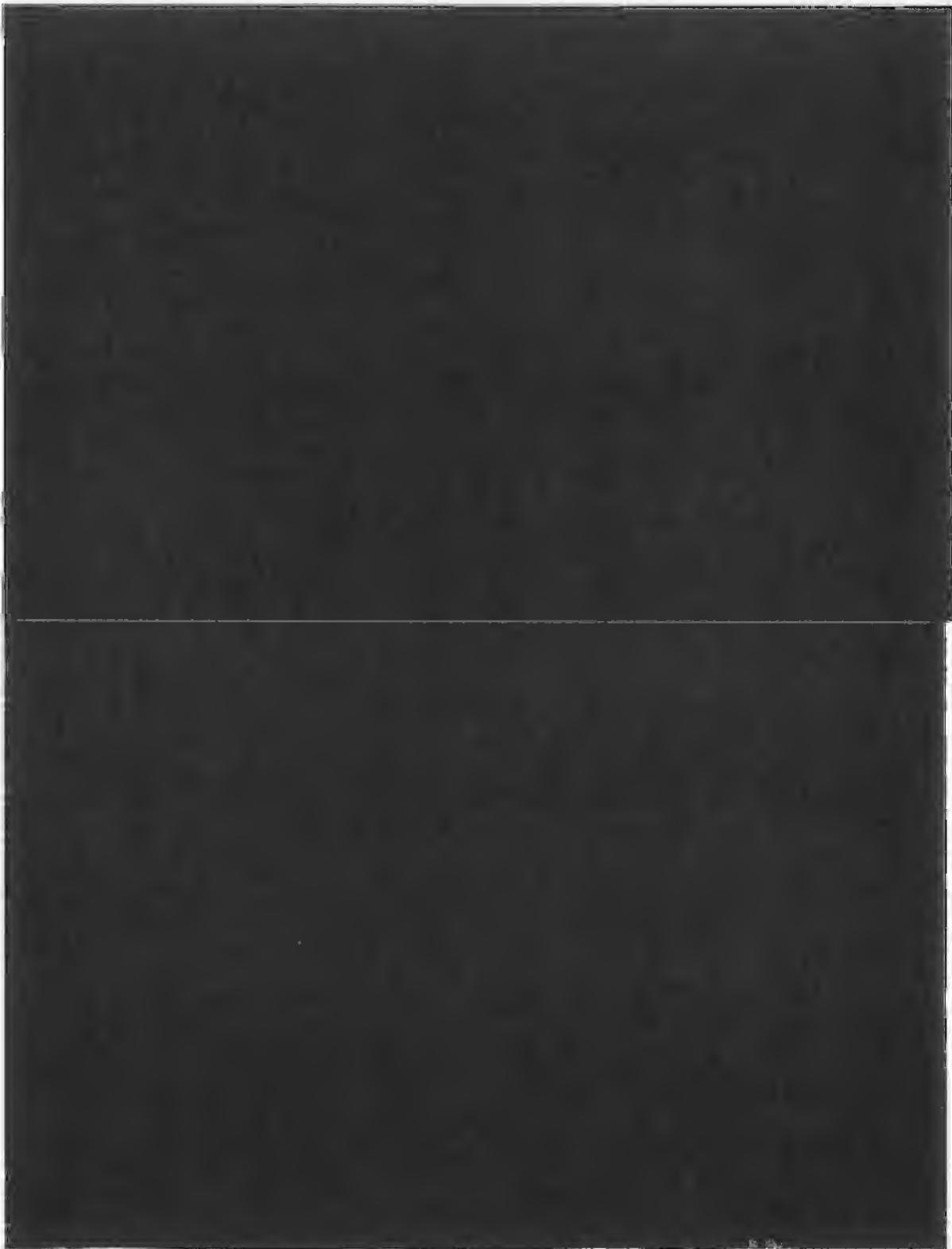
The Department has the right to take ownership of NBPco or its assets under certain circumstances in the contract as drafted. This right is enabled through the security package set out in section 4.3.2 above.

The following table sets out the consequence of such termination being invoked and any applicable compensation payable under each of the Termination Events as set out in schedule 6.9 and 9 of the Contract. Whilst this contract is not a PPP contract, PPP's are a common contract structure in recent use for large scale infrastructure projects involving the private sector. Therefore we have also included a summary comparison to the NDFA PPP template Contract which shows similarities and some key differences when compared to this project.

Table 4.9 Consequence of Termination



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Given the uncertainties during deployment and the need for Contract Assumptions and conditional Subsidy Payments it was important to have checkpoints during deployment and at year 10 where the Department could take ownership of NBPco or its assets, for an agreed payment as set out in schedule 6.9, to enable it to take control over the project if circumstances were deteriorating and unknown risks materialising. By introducing these mechanisms it creates a risk of termination for NBPco and its shareholders. As such, a compensation on termination regime, unique to this project, was required to achieve a balance between incentivising NBPco and its shareholders to continue with its obligations of the Contract and to ensure there is sufficient incentive for them to invest in the project.

Action (Pre-Contract Award): Contract

The addendum issued to the Bidder at ISFT sets out the mechanisms and consequence of termination. This is currently being contractualised and should be finalised in advance of Preferred Bidder appointment.

4.6.3 Governance of Returns

In addition to Deployment Clawback, IRR Clawback and Terminal Value Clawback there is a restriction in the Contract on NBPco raising additional debt finance without prior written consent.

In order to secure the consent, the contract requires NBPco to provide full details of any proposed financing, including underlying documentation (such as term sheets and draft full form finance contracts) and a copy of the updated Project Financial Model demonstrating the forecast impact of the proposed refinancing for NBPco.

The contract provides that any gains / savings generated by such financing should be captured within the IRR Clawback calculation over the Contract Period.

4.7 Conclusions

The findings of this section of the Single Bidder Solution Assessment report are that:

- The private sector partner has indicated that they intend to invest significant capital into the network, the returns on which will be subject to the risk of:
 - the network deployment being delayed; or
 - NBPco failing to stimulate demand for the services; or
 - services not being delivered to the standards required by the contract; or
 - the private sector partner not investing in the network over the contract term.
- NBPco would appear to have structured their tender to protect against downside risks.
- The contract provides a mechanism, if implemented appropriately, for Government to recoup some of the subsidy paid out if the actual financial performance of NBPco (or Buildco) is better than forecast in the Project Financial Model.
- The contract provides a mechanism, if implemented appropriately, for Government to take over the network if NBPco fails to deliver the services during the contract term, or for a period of 10 years beyond the end of the contract term.

5 Network Build

5.1 What Government Needs

As explained in section 2.2, this project is for the deployment of a wholesale broadband network that will make available high speed broadband services to circa 536,000 of the hardest to reach premises in Ireland, premises which, in the absence of the State's intervention (and taking into consideration the current plans of the wholesale industry providers), are unlikely to receive such services for at least the next three years.

The State's intervention is to provide a capital grant to the entity that is to deploy the network in accordance with the commercial stimulus model, otherwise known as "gap funding". In return for this public subsidy, the entity responsible for the deployment will need to contractually commit to:

- Deploy the high speed broadband network to pass 100% of the 536,000 premises;
- Complete the network deployment in a single programme, planned over 7 years;
- Achieve specified Milestones Dates for completion of deployment to Strategic Community Points and to Deployment Areas (each circa 5,000 premises), or otherwise suffer reductions in public subsidy; and
- Complete the network deployment for a public subsidy that is set at a maximum level under the terms of the contract (the Maximum Deployment Subsidy). In this instance the Bidder has had to set out the level of subsidy it requires in their Final Tender before they have had the opportunity to complete detailed site surveys and low level designs for the deployment.

The scale of this commitment is significant in the commercial broadband market in Ireland. It is intended to try and deliver on the Government's commitment to provide high speed broadband to every citizen and business in Ireland, regardless of location, at a price that is affordable and in line with comparable products in non-intervention areas.

In order to determine whether NBPco is in a position to take on this commitment, the Government has to consider whether, in respect of the "Network Build":

- The Bidder's technical solution meets or exceeds the Department's requirements (but not at an excessive cost) and the Bidder has the technical capacity to deploy the network within the required timescales;
- Deployment risk is appropriately allocated within the NBP contract;
- The Bidder's Project Cost Model is appropriate (i.e. the volume and cost assumptions are appropriate for the Bidder's technical solution and include an appropriate level of contingency to cover the deployment risk that NBPco will bear);
- NBPco and its key subcontractors have the financial capacity to complete the network deployment, taking into account the risk of cost overruns. This is also considered in section 4 of this report;

- The NBP contractual framework incorporates sufficient safeguards (covering both NBPco and its key subcontractors) to address the requirements of the State Aid Guidelines, the NBP Intervention Strategy and the Public Spending Code, including:
 - Appropriate levels and use of public subsidy;
 - Full technical and financial transparency in respect of network build;
 - Appropriate claw back of public subsidy if the permitted expenditure actually incurred during deployment is less than forecast in the Project Cost Model; and
 - Robust governance arrangements to ensure that potential savings in permitted expenditure are identified and realised by NBPco (to facilitate claw back);
- There are appropriate financial and contractual incentives for NBPco to complete the network deployment within the required timescales; and
- The Department has the option (should it so desire) to take-over the deployed network and to complete the network deployment if NBPco is unable or unwilling to complete the network deployment itself.

This section examines the extent to which the Bidder's solution, when taken together with the NBP contract, has the potential to deliver on the above requirements. .

5.2 Solution Summary

5.2.1 Technical Solution

The technical solution proposed by the Bidder is a fibre to the premises (FTTP) network, designed to deliver 100% fibre from the exchange to each premise over the seven year deployment period. The detail of the remainder of this section is drawn from the Bidders final tender or the analysis undertaken by the technical advisers to the project, Analysys Mason.

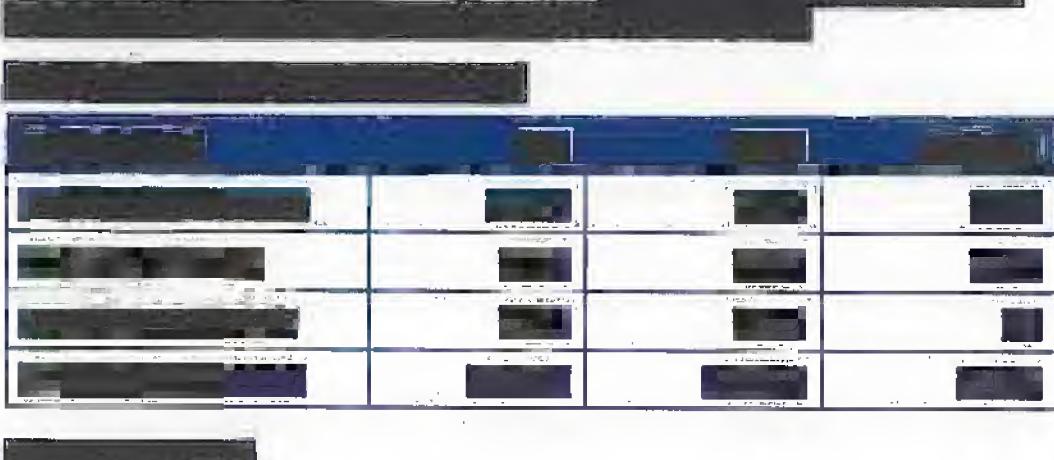
The Bidders tender sets out that NBPco propose to utilise existing physical infrastructure where possible to build the fibre network. The fibre will be predominately installed as aerial fibre installed on poles, however underground ducts will also be used wherever available. NBPco proposes to use standard industry practice (e.g. surveying, design, install techniques, tree trimming, testing etc.) to deploy the network.

The main source of the existing infrastructure is proposed to be eir poles and eir duct, with enet duct (in the Metropolitan Area Network) also used where available. During the deployment it is possible that a small number of premises may be unreachable using a fibre cable due to, for example, private property wayleave issues or exorbitant construction costs. In these limited cases, the contract (if implemented appropriately) provides that these premises may be serviced using an appropriate wireless technology, subject to approval by the Department.

NBPco propose to also build a wireless network to connect strategic community points ahead of the fibre network reaching those locations. This wireless network should allow local authorities to establish digital hubs, providing access to high speed broadband services to residents and businesses while the full fibre network is being built. The

strategic community points were selected by the local authorities and are public buildings such as community centres, buildings, schools etc.

As shown in Table 5.1 below, the Bidder's Project Cost Model for this technical solution assumes a total fibre distribution length of circa [REDACTED]



NBPco's fibre network will comprise a 'pass network' and a 'connect network'.

The pass network is the part of the new fibre network that lies between the point of inter-connection to a RSPs' network (using NBPco's Wholesale Products) and a distribution point (inclusive) that is sufficiently close to end user premises, such that NGA broadband services can be provisioned within the service provisioning targets at the standard connection charge.

For the Bidder's solution, the point of inter-connection to a RSPs' network is either located in:

- the nearest Metropolitan Area Network (MAN) Point of Presence (if the RSP uses VUA wholesale Product), or
- in one of two Bitstream inter-connection points in Dublin (if the RSP uses the Bitstream Wholesale Product).

If the RSP elects to use one of the Bitstream inter-connection points, it has to purchase an additional "backhaul" product from NBPco to backhaul traffic from all the local areas back to Dublin. For clarity, the backhaul network is part of the pass network.

The connect network is that part of the network that connects the distribution point to the end user premises, and is deployed after the end user orders a connection. The connection involves extending the 'passed' network by laying fibre cable from the distribution point to a modem point located in the premises.

³⁸ Note that this is the network length. All fibre cable will be new fibre cable. No fibre cable is rented. The poles and ducts that carry the new fibre cable are partly new and partly rented.

Analysys Mason has reviewed the Bidder's proposed FTTH network design³⁷ and has concluded that:

- The Bidder's proposed FTTH network design is in line with international best practice;
- The network has been designed at a relatively granular level using appropriate GIS maps (OSI road maps) and an appropriate design tool (Setics Sttar);
- The Bidder has used appropriate link budgets to design its network; and
- The network design described in the Bidder's "Technical Solution" submission at Final Tender stage is correctly reflected in the Bidder's Project Cost Model for both passive and active network elements.

Analysys Mason has also reviewed the active technology proposed by the Bidder and has confirmed that it is a higher specification than that required by the Department in the NBP contract³⁸. According to Analysys Mason³⁹ this specification provides a next generation technology solution that offers four times the download bandwidth and eight times the upload bandwidth of the technology assumed by the Department's Budget Cost Model. Analysys Mason has stated that they anticipate that, based on industry trends and competition between operators, next generation technologies (such as that assumed by the Bidder) will be deployed within the next five years by commercial operators in Ireland, coinciding with the final years of the NBP deployment.

Analysys Mason has estimated the overall cost premium for introducing this next generation technology of active equipment from the start of the NBP deployment (as opposed to at the first refresh point, circa seven years after the initial deployment in line with other operators) is an increase in capital costs of circa █ over the life of the contract, with such percentage difference likely to reduce as the costs of the next generation technology will continue to fall.

Analysys Mason has concluded that, considering the requirements of the NBP contract, the future demand, other operators' strategies, and the relatively low-cost premium linked with the introduction of the higher capacity technology at the outset of the contract, Analysys Mason believes that the technology proposed by the Bidder can be considered as a value for money technology in the context of the NBP.

Further details and analysis of the technical solution are provided in section 5.3.

³⁷ Technical Solution Assessment Methodology Report, November 2018, Analysys Mason

³⁸ The Bidder has proposed a 150 Mbps product as its main product. This is in excess of the Department's minimum requirement of 30 Mbps (download speed).

³⁹ XGS PON VfM Analysis, November 2018, Analysys Mason

5.2.2 Deployment and Connection Plans

5.2.2.1 Deployment period in NBP Contract

The Bidder's deployment plan requires access to Openeir infrastructure (ducts and poles) and enet infrastructure (ducts). Section 6 describes the Infrastructure Access Agreements that NBPco will enter into with Openeir and enet in order to ensure that it has use of this infrastructure for the full term of the contract.

In respect of Openeir infrastructure, we understand that Openeir will need to "make ready" the poles and ducts before NBPco can access the infrastructure to deploy its own fibre. Subject to the award of the NBP Contract and the finalisation of an Infrastructure Access Agreement between Openeir and NBPco, it is proposed that Openeir will establish and mobilise a Major Infrastructure Project (MIP) team to manage NBPco's pole replacement and sub-duct access requests.

[REDACTED]

[REDACTED]

[REDACTED]

The timing of access to suitable poles and ducts is a major dependency on NBPco's deployment plans. Given the MIP capacity constraints outlined above, [REDACTED], the Department extended the deployment period in the NBP Contract from 5 years to 7 years in advance of the final tender stage.

NBPco's ability to complete the network deployment within this 7 year period is therefore dependent on the timely completion of the MIP by Openeir. The risk of delay to the MIP is considered further in section 5.4.3.

Action (Pre-Contract Award): Openeir MIP

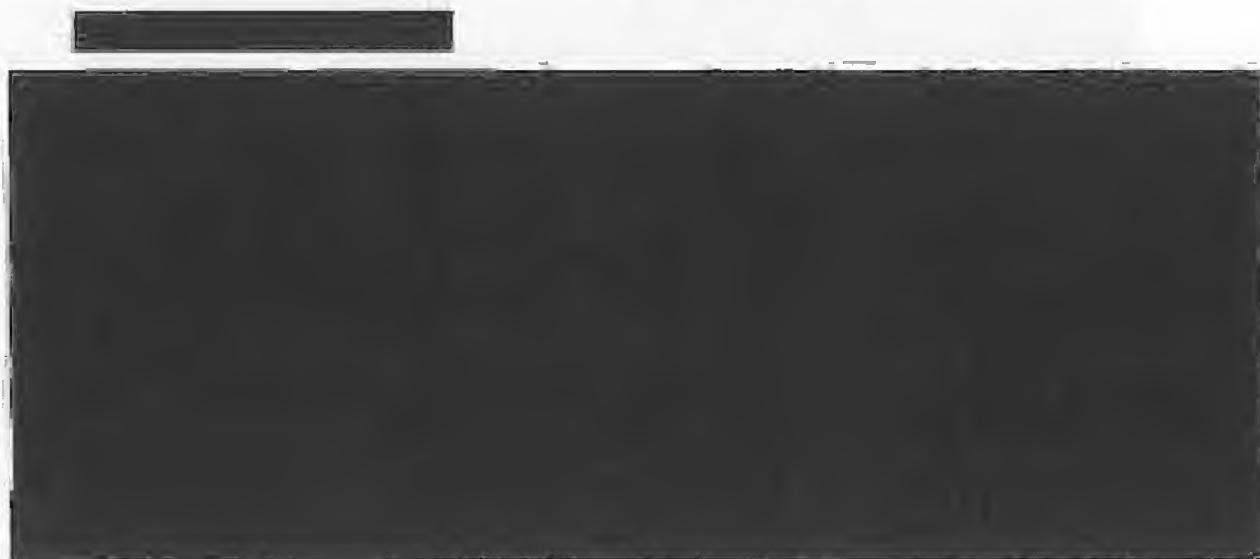
The contract between NBPco and Openeir for the MIP is currently in an initial draft form and is to be finalised prior to Contract Award. It should be reviewed by DCCAE for consistency with the NBP contract and for incentives and protections in respect of the timely delivery of the MIP. Bidder to finalise this agreement to the satisfaction of the Department prior to the award of the NBP contract.

5.2.2.2 Deployment plan in Final Tender

The Bidder's Final Tender assumes that it will take 7 years to deploy the pass network, i.e. to pass the 536,000 total premises in the Intervention Area.

Based on its analysis of the premises database, the Bidder has estimated there to be [REDACTED] addressable premises in the Intervention Area (i.e. number of potential connections), once an adjustment is made for mixed use premises [REDACTED] with a business and residential address), vacant premises [REDACTED] and other factors including the addition of new premises [REDACTED] (see section 7.4.3).

The Bidder has forecasted a 25 quarter deployment period, which begins in Q4 of 2019 and completes in Q4 2025. The deployment follows the profile shown in figure 5.1 below, with rollout ramping up to a maximum [REDACTED] before gradually reducing as the rollout passes the most rural of premises.



Source: Project Financial Model

The Bidder's deployment plan for existing premises is in line with the Department's requirement for deployment to be completed within 7 years. It is however dependent on the rate of progress of the Openeir Major Infrastructure Project as described in section 5.2.2.1 above. This risk is considered further in section 5.4.3.

The deployment to new premises (those built after the date of the premises database) is aligned with that of existing premises during the initial rollout. However, after Q4 2025 (i.e. once all existing premises have been passed), the Bidder assumes that all new premises built from that point onwards will be deployed to in the same quarter they are completed. In essence, the Bidder does not envisage a significant time delay in deploying to new premises built post deployment over the course of the project.

5.2.2.3 Connection plan in Final Tender

The Bidder proposes (in line with the contract requirements) that NBPco will only connect a premise when it receives an order from a service provider. It would be expected that some orders could be received before construction of network starts and these can be connected as soon as the premises is passed.

Figure 5.2 below compares the Bidder's rate of passing existing premises with its forecast rate of connecting premises (i.e. the assumed rate at which end users will order services) as taken from their tender. The figure shows that whilst the costs of passing existing premises will be incurred over a seven year deployment period, the costs of connecting premises will be spread over the 25 year contract period.

The implications (in terms of impact on public subsidy) of the Bidder's forecast rate of connecting premises (i.e. take-up profile) is examined in section 7 of this report.



5.2.3 Deployment Structure

5.2.3.1 Contractual structure and responsibilities for deployment

The Bidder has divided the Intervention Area into 110 "Deployment Areas" for the purposes of planning its network deployment. For each Deployment Area a detailed low level design will be prepared, which will involve surveying the target routes for the network. Once the detailed design has been completed and has been approved by the Department (M1 Milestone), the deployment can commence in that Deployment Area.

The Bidder has stated that [REDACTED] of the deployment obligations will be subcontracted to Buildco, a special purpose vehicle whose direct or indirect shareholders may overlap with those of NBPco.

It is proposed that Buildco will enter into subcontracts with:

— [REDACTED] for the preparation of the detailed designs;

— [REDACTED] in respect of the "passive works" associated with the fibre deployment. The Bidder has stated that the majority of the passive works will be undertaken [REDACTED] each whom is an experienced telecom network contractor

and

— [REDACTED] in respect of the "active works" i.e. the active equipment which will support the 150 Mbps product that NBPco has proposed as its main product. This is in excess of the Department's minimum requirement of 30 Mbps (see section 5.2.1).

It is proposed that NBPco will have infrastructure access agreements with both openeir and enet in respect of back-haul, duct-capacity and co-locations services to support the NBPco network. The infrastructure access agreement with Openeir is proposed to include the MIP, which will provide for Openeir to make ready the routes identified in the detailed design for a given Deployment Area (i.e. repair any Openeir poles or ducts on the routes).

It is proposed that NBPco will also have direct subcontracts with:

- [REDACTED] in respect of designing, building, maintaining and commissioning the wireless strategic community points. As such, it is proposed that [REDACTED] will undertake the remaining small percentage of the deployment that has not been subcontracted to Buildco;
- [REDACTED] in respect of support and maintenance services relating to the active network; and
- [REDACTED] in respect of connection works.

5.2.3.2 NBPco's allocation of deployment risk

As noted above, the Bidder has stated [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



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Action (Pre-Contract Award): Build Contract and Buildco Subcontracts

The Build Contract and Buildco Subcontracts are to be completed by the Bidder and reviewed by DCCAE for consistency with the NBP contract. Bidder to finalise these agreements to the satisfaction of the Department prior to the award of the NBP contract.

The Build Contract should be clear on how disputes between NBPco and Buildco will be appropriately addressed.

Action (Pre-Contract Award): Buildco Security Package

Buildco security package to be finalised by the Bidder and reviewed by DCCAE for adequacy and consistency with the NBP contract. Bidder to finalise the security package to the satisfaction of the Department prior to the award of the NBP contract.

5.3 Network Build Volumes and Costs

5.3.1 Network Design

As explained in sections 3.1 and 3.2, in accordance with the Public Spending Code, the Bidder's Final Tender Project Cost Model is to be compared to the May 2018 Budget Cost Model. When undertaking such comparisons, it is important to recognise that whilst both cost models deliver the same minimum requirements (i.e. the minimum requirements set out in the NBP contract), there will be differences in the solutions (i.e. network designs) that are used by each cost model to deliver these requirements.

Accordingly, it is important to be cognisant of such differences when comparing the results of the two cost models (as not all comparisons will be on a like for like basis).

The main differences that relate to "Network Build" can be summarised as follows. The estimated contribution of each of these differences to the overall difference in operating costs in the Bidder's PCM and the Department's Budget Cost Model is summarised below and is explained further in this report and Analysys Mason's report.

Table 5.2: Differences between the Budget Cost Model and Bidder's PCM

Item	Budget Cost Model	Bidder's Project Cost Model	Indicative contribution to difference (C)
Network Design	<ul style="list-style-type: none"> Network designed around [REDACTED] openair exchanges 	[REDACTED]	[REDACTED]
Deployment period	<ul style="list-style-type: none"> 5-year deployment period (as prepared prior to the extension of the deployment period due to the terms of openair's MIP) 	[REDACTED]	[REDACTED]
Technology	<ul style="list-style-type: none"> 2.5 Gbit/s GPON (3x replacement cycles) 	[REDACTED]	[REDACTED]
Infrastructure rental	<ul style="list-style-type: none"> Assumed regulated price for both pole and duct access 	[REDACTED]	[REDACTED]
Unit cost of cable	<ul style="list-style-type: none"> Based on unit costs gathered from independent benchmarks 	<ul style="list-style-type: none"> Based on turnkey unit costs obtained by Bidder from its subcontractors 	[REDACTED]

⁴⁰ XGS PON ViM Analysis, November 2018, Analysys Mason

Item	Budget Cost Model	Bidder's Project Cost Model	Indicative contribution to difference (C)
National backhaul network	<ul style="list-style-type: none"> Assumes that NBPco builds the national backhaul (capex) 	<ul style="list-style-type: none"> National backhaul rented as a managed service from enet (opex) 	<ul style="list-style-type: none"> ██████████ ██████████
Total connections	<ul style="list-style-type: none"> 341,000 first time connections to existing premises 53,000 first time connections to newly-built premises No reconnections assumed 	<ul style="list-style-type: none"> ██████████ first time connections to existing and newly built premises. This, together with a higher connection cost per premise, is driving higher connection costs than Budget Cost Model. ██████████ reconnections assumed (with connection costs modelled) 	<ul style="list-style-type: none"> ██████████
Replacement of cables	<ul style="list-style-type: none"> Some replacement for overhead cables 	██████████	<ul style="list-style-type: none"> ██████████
Margin and contingency	<ul style="list-style-type: none"> An overall 5% contingency was assumed for capex 	<ul style="list-style-type: none"> ██████████ 	<ul style="list-style-type: none"> ██████████

Source: *Analysys Mason & Bidders Final Tender PCM Cost Memorandum*

5.3.2 Network Build Volumes

As stated above, the Bidder's technical solution proposed is a fibre to the premises network, utilising existing physical infrastructure where possible to establish the fibre network.

As shown in Table 5.3 below, of the circa ██████████ total network length in the Bidder's technical solution proposed (to pass and connect premises), circa ██████████ is to be built using existing infrastructure ██████████ on poles and ██████████. The remaining circa ██████████ is to be built using new infrastructure.

As stated in section 5.3.1 above, the Bidder's Project Cost Model is based on a different network design to the Department's Budget Cost Model. This means that the two cost models cannot be compared on a like for like basis in volume terms, for example in terms of network lengths and numbers of poles.

In order to review and assess the Bidder's Project Cost Model network volume assumptions, the Department has prepared a "Benchmark Network Design", which is prepared on a similar basis to the Bidder's Project Cost Model. Table 5.3 below also presents a comparison with the Department's Benchmark Network Design in respect of

total network lengths (pass and connect). Appendix A presents this comparison separately for the pass network and the connect network.

Table 5.3: Total Infrastructure lengths and volumes for the network

Solution element	Bidder Total	DCCAE Benchmark Total	Bidder New / Built	DCCAE Benchmark New / Built
Total Network length (km)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total UG network length (km)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
UG network in Excluded Area	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
UG network in IA	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total OH network length (km)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
OH network in Excluded Area	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
OH network in IA	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total # of poles	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
# of poles in Excluded Area	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
# of poles in IA	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: Analysys Mason

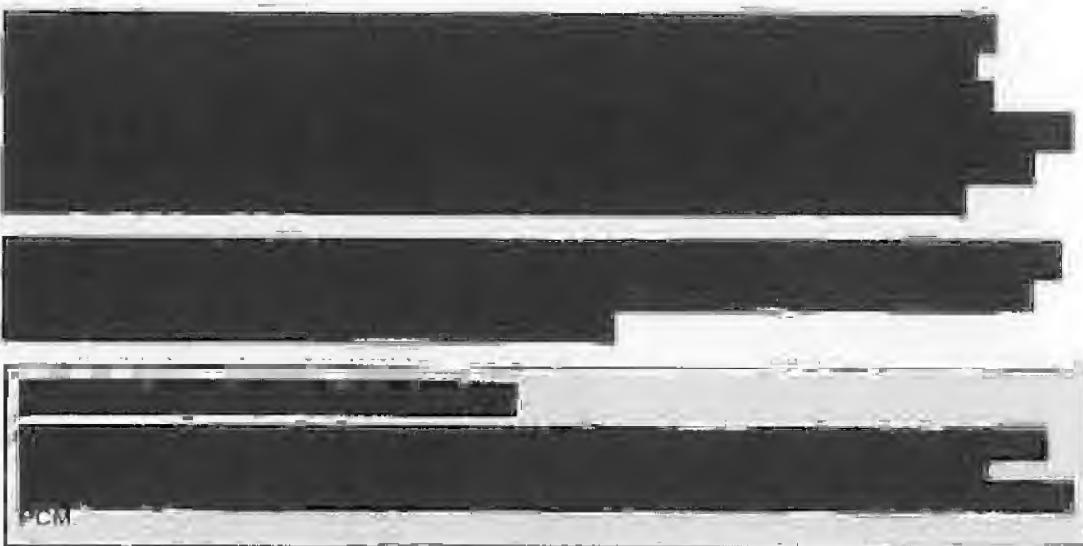
The figure shows that there is a close correlation in the overall network route lengths estimated by the Bidder and the Department, with the Bidder's network length circa 1% longer than that estimated by the Department's Benchmark Network Design.

There is also a close correlation in the proportion of the network assumed to be overhead and underground, with the Bidder estimating from its network model that 86% is overhead and [REDACTED] underground, and the Department's Benchmark Network Design estimating that [REDACTED] will be overhead and [REDACTED] underground. The total number of poles required by each of the network models is also reasonably similar (the [REDACTED] difference is mainly explained by a different inter-pole distance between the Cost Model and the PCM). Analysys Mason believe this is an acceptable tolerance given the desk-based nature of the network design activities undertaken by the Bidder and the Department.

The Bidder has however assumed a slightly higher proportion of new build infrastructure [REDACTED] compared to the Department's Benchmark Network Design [REDACTED]

Analysys Mason has concluded⁴¹ on the basis of these comparisons that the differences between the Bidder's PCM and the Department's Benchmark Network Design in terms of overall network route length and number of poles are within an acceptable tolerance.

⁴¹ Technical Solution Assessment Methodology Report, November 2018, Analysys Mason



Analysys Mason has also analysed the Bidder's resource assumptions (for NBPco and Buildco) in relation to the deployment of the pass and connect networks. The analysis focuses on the in-house resources that will manage the work undertaken by the subcontractors of NBPco and Buildco, as the subcontractor resources are not set out in the PCM, rather they are incorporated within the subcontractor unit costs. The analysis is set out in Analysys Mason's report⁴², and the conclusion of the analysis is that:

- the Bidder has provisioned sufficient in-house resources to manage the deployment of the pass network according to its deployment plan and meet the associated seven year deployment timeline; and
- the Bidder has provisioned sufficient in-house resources to manage the deployment of the connect network according to its connection plan.

Analysys Mason's overall conclusion in relation to volumes is that:

"Despite the differences in underlying network design between the Budget Cost Model and the Bidder's PCM, we have been able to conclude that most of the key volumes (relating to premises, network infrastructure and resources) in the Bidder's PCM are robust and hence those parts of the Bidder's response relating to volume are acceptable."

⁴² Technical Solution Assessment Methodology Report, November 2018, Analysys Mason

5.3.3 Network Build Costs

5.3.3.1 Total Capital Costs

The Bidder has forecast its capital expenditure over the life of the contract as follows:

Table 5.4: Capital Expenditure over Contract Period

Total capital expenditure	Years 1-10 (€ million)	%	Years 1-25 (€ million)	%
Capex to pass	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Capex to connect	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: Project Financial Model

Table 5.5 below compares the capital expenditure forecast in the Department's Budget Model and the Bidder's Final Tender Project Cost Model. Whilst both models deliver the minimum requirements set out in the NBP contract, it is important to note (as detailed in section 5.3.1) that the models are based on different network designs, with the Bidder's PCM assuming a higher technology specification than the Budget Model.

Table 5.5: Comparison of Total Capital Expenditure over Contract Period

Total capital expenditure	Budget Cost Model March 2018 (€ million)	Bidder Final Tender PCM (€ million)	Difference (€ million)	Difference (%)
Capex to Pass	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Capex to Connect	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
OSS/BSS	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total capex (excluding margins/contingencies)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Margins / contingency	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total Capex	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: Analysys Mason

Excluding margins and contingency, the Bidder's PCM assumes an overall capex that is [REDACTED] than the Department's Budget Cost Model.

The total capital expenditure to pass and total capital expenditure for OSS/BSS in the two models are very similar. However, there is a significant difference in relation to the capital expenditure to connect, which is explained by the following factors:

- a significantly higher number of connections are assumed in the Bidder's PCM compared to the Budget Cost Model (████████ connections, although the assumed rate of take-up is slower than the Budget Cost Model); and
- a significantly higher total connection cost per premise is assumed in the Bidder's PCM compared to the Budget Cost Model (████████ cost per premise).

The differences in the connection assumptions in the two models are considered further in section 5.3.3.4.

5.3.3.2 Initial capital costs

The initial capital expenditure forecast in the Department's Budget Cost Model and the Bidder's Project Cost Model (for initial network deployment and initial connections, but excluding replacement and reconnection expenditure) compare as follows:

Table 5.6: Comparison of Initial Capital Expenditure (i.e. excluding replacement)

Capital expenditure (excluding replacement costs)	Budget Cost Model March 2018 (€ million)	Bidder Final Tender PCM (€ million)	Difference (€ million)	Difference (%)
Capex to Pass	████████	████████	████████	████████
Capex to Connect	████████	████████	████████	████████
OSS/BSS	████	████	████	████
Total capex (excluding margins/contingencies)	████████	████████	████████	████████
Margins / contingency	████	████	████	████
Total Capex	████████	████████	████████	████████

Source: Analysys Mason

This comparison of network build costs shows that, in terms of "capex to pass" (excluding margins / contingency), the Budget Cost Model and Final Tender PCM are in reasonably close alignment.

The main differences in absolute terms between the two models is in the forecasts for "capex to connect" and "margins / contingency", with the Bidder's Final Tender including an additional ██████████ for connections ██████████ and an additional ██████████ for margins / contingency.

These two differences are considered further in sections 5.3.3.4 and 5.3.3.5 below.

5.3.3.3 Replacement capital costs

Table 5.7 below compares replacement capital expenditure in the Budget Cost Model and the Bidder's Final Tender PCM.

Table 5.7: Comparison of Replacement Capital Expenditure

Replacement capital expenditure	Budget Cost Model March 2018 (€ million)	Bidder Final Tender PCM (€ million)	Difference (€ million)	Difference (%)
Capex to Pass	■	■	■	■
Capex to Connect	■	■	■	■
OSS/BSS	■	■	■	■
Total capex (excluding margins/contingencies)	■	■	■	■
Margins / contingency	■	■	■	■
Total Capex	■	■	■	■

Source: Analysys Mason

Excluding margin and contingency the Bidder's PCM assumes a total replacement capital expenditure that is ■ less than the Budget Cost Model. The main reason for this difference is that unlike the Budget Cost Model, the Bidder has assumed that network cables will not need to be replaced and that the active equipment will ■ during the 25 years contract period rather than three.

Analysys Mason has concluded⁴³ that, in their view, the Bidder's assumptions regarding cable replacement are "slightly aggressive but reasonable" given the 25 year contract duration. If the contract duration were longer, they would expect some allowance for replacement of network cables and/or a greater allowance for repair and maintenance.

Action (Pre Contract Award): Asset Handover Conditions

5.3.3.4 Analysis of capital costs of connections

Table 5.8 below provides a breakdown of the capital cost to connect premises.

Table 5.8: Comparison of Capital Expenditure to Connect Premises

Capital expenditure to connect premises	Budget Cost Model March 2018	Bidder Final Tender PCM	Difference	Difference (%)
Initial capex to connect (EUR million)	■	■	■	■

⁴³ Technical Solution Assessment Methodology Report, November 2018, Analysys Mason

Capital expenditure to connect premises	Budget Cost Model March 2018	Bidder Final Tender PCM	Difference	Difference (%)
Total first-time premises connected by year 25	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Capex to connect per premise (EUR)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: Analysys Mason

The figure shows that the Bidder's PCM includes a [REDACTED] for connections [REDACTED] compared with the Budget Cost Model. The Bidder's PCM also assumes [REDACTED] connections than the Budget Cost Model and a capital cost to connect per premise that is [REDACTED] than in the Budget Cost Model.

Stating the capex to connect for both models on a per premises basis removes the effect of the greater number of connections in the Bidder's PCM, leaving a comparison of capex to connect per premise of [REDACTED] in the Budget Cost Model and [REDACTED] in the Bidder's PCM (a difference of [REDACTED]).

Table 5.9 below shows that this [REDACTED] per premise connected difference is primarily related to the following two factors:

- length of connect cable per premises [REDACTED]; and
- unit cost of connect cable [REDACTED]

Table 5.9: Analysis of Connection Cost per Premise

Item	Capex reduction in EUR per premise	Proportion of difference (%)
Length of connect cable	[REDACTED]	[REDACTED]
Unit cost of cable (material)	[REDACTED]	[REDACTED]
In-house service suite (labour)	[REDACTED]	[REDACTED]
ONTs (material)	[REDACTED]	[REDACTED]
Other	[REDACTED]	[REDACTED]
Total	[REDACTED]	[REDACTED]

Source: Analysys Mason

⁴⁴ This is the average capital cost of connections assumed in the Bidder's PCM (total connection capex divided by cumulative number of connections (in year 25). It is not the Connection Milestone Payment (subsidy payment) which is set at [REDACTED] in year one of the contract.

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The [REDACTED] difference in the length of connect cable is discussed in section 5.3.2 above, where we have also presented Analysys Mason's recommendation in this respect.

In respect of the [REDACTED] difference in unit cost of cable, analysis undertaken by Analysys Mason⁴⁶ has identified that, whilst the Bidder's labour related unit cost for cable installation "appears reasonable", the Bidder's material related unit cost for cable appears to be higher than expected, even when allowing for the additional costs of logistics and storage that are included in the Bidder's assumption.

Analysys Mason has therefore provided the following recommendation to address this assumption and to facilitate clawback, where applicable.

Action (Pre & Post Contract Award): Procurement of Fibre Cable

DCCAE to have strong oversight of the procurement of the fibre cables for the NBP as this is an area in which there may be strong potential for cost savings and hence clawback.

Contract to also include clawback (or equivalent provisions) to address the value of materials (e.g. fibre cable) purchased but not required for the NBP network, where this is significant at the end of deployment (i.e. where Permitted Expenditure has been incurred for the purchase of materials but an amount of this material remains unused at the end of the NBP deployment).

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

⁴⁶ Technical Solution Assessment Methodology Report, November 2018, Analysys Mason

5.3.3.5 Consideration of margins and contingency

In respect of Network Build, in its final tender, the Bidder has proposed to include⁴⁷:

- a Buildco margin of circa [REDACTED] on the capital costs of labour and materials for the pass network (including Buildco staff); and
- a contingency of circa [REDACTED] on the capital costs of labour and materials for connections (which is in addition to the connection cost assumptions described in section 5.3.3.4 above).

The total value of the margins and contingency allowances related to build costs over the contract period is circa [REDACTED] (section 5.3.3.1 above). Of this, circa [REDACTED] is in the first 10 years, [REDACTED] of which is margin on the costs of building the pass network.

As explained in section 5.2.3.3 above, it is proposed that Buildco will bear the risk associated with network deployment.

[REDACTED] covering:

- Network design quality and accuracy;
- Materials and equipment specifications and procurement;
- Network build quality and programme;
- Network build cost overruns (where not covered by Contract Assumptions);
- Subcontractor risk of failure; and
- Network defect warranties and repair costs.

Buildco will therefore bear, via its [REDACTED] margin, the risks passed down by NBPco associated with the satisfactory and timely build of the network, where this is not covered by build related Contract Assumptions (see section 5.4.3). This includes the cost risks associated with inaccuracies in design (e.g. network volumes) and the performance risks associated with delay payments (i.e. deductions from subsidy for

⁴⁷ Percentages are based on a clarification response received from the Bidder.

delays in deployment) and performance credits (i.e. deductions from subsidy for a failure of the network to meet the performance levels set out in the Contract).

It is expected that Buildco will pass down much of this risk to its subcontractors, for example by requiring similar warranties from those contractors in respect of the design and construction of the network. Such flow down will be a key area of focus for the review and finalisation of subcontracts as described in section 5.2.3.3.

Mitigation of the risk through contingency is more consistent with the gap funding model, as under the terms of the contract, any unrequired contingency allowances would be subject to clawback. Margin forecast in the Bidder's PCM at final tender stage is however not subject to clawback and to the extent that the margin is not required to cover increases in deployment costs borne by Buildco, unused margin is profit to Buildco which is not subject to clawback.

We recommend that the Department addresses these issues in the following ways:

Action (Pre-Contract Award): Re-categorise Margin as Contingency

Require the Bidder to re-categorise a proportion of [REDACTED] such that it will be subject to clawback.

Action (Post Contract Award): Governance of Network Build Costs and Connection Costs

DCCAE to put in place appropriate resources to examine the capital costs actually incurred by Buildco and its subcontractors so that, in the event that there are savings in the capital costs of the pass network or of connections, DCCAE can recover an appropriate amount of subsidy payments through the deployment clawback and CMP mechanisms in the NBP contract

5.3.3.6 Comparison of cost per premise passed

Analysys Mason has benchmarked the Bidder's PCM initial network build cost (capital expenditure for the pass network) with other FTTP deployments in Europe using the "cost per premise passed" (CPPP) benchmark.

Analysys Mason's methodology is explained in section 4 of their report⁴⁸, which sets out the costs that are relevant to the CPPP benchmark. The results of the benchmarking are presented in Figure 5.3 below.

The figure compares the CPPP of the Bidder's PCM ("Ireland NBP") with the CPPP of other comparable FTTP networks in Western Europe. The CPPPs are classified into two different geotypes:

- Urban and sub-urban deployments (blue); and
- Rural deployments (green).

It can be seen from the figure that the CPPP for FTTP networks in urban areas is significantly lower than for rural areas.

⁴⁸ Technical Solution Assessment Methodology Report, November 2018, Analysys Mason



Source: Analysys Mason

Focussing on the three benchmark networks in rural geotypes of a similar nature to the NBP, Analysys Mason found that the average CPPP is [REDACTED]. This is fractionally lower than the Bidder's PCM CPPP [REDACTED]. However, the networks in France, Spain and the UK do not address the last few percent of premises (i.e. the most rural), as is the case for the NBP in Ireland.

On this basis, Analysys Mason has concluded that the implied CPPP for the NBP is reasonable compared with similar European FTTP benchmarks, when accounting for the highly rural nature of the NBP Intervention Area and that it is designed to pass 100% of premises (i.e. including the most rural premises).

5.4 Governance of Network Build

5.4.1 Consistent with Strategy

Governance of the network build phase is proposed to be consistent with the key requirements of the Intervention Strategy Governance Report (December 2015). In summary terms, the Contract (if implemented appropriately) provides for:

- The Department to review and monitor the planned network build from Final Tender through to completion of detailed designs;

- The Department to monitor, test and verify the actual network build and build costs on a transparent, open book basis;
- Payment of capital related subsidy for the satisfactory achievement of clearly defined deployment milestones:
 - M0 Milestones for NBPco establishment and mobilisation;
 - M1 Milestones for completion of detailed designs;
 - M2 Milestones for completion of the network passing every 5,000 premises;
 - M3 Milestones for the completion of the network in each Deployment Area (note that there is only a subsidy payment at the M3 Milestone if there has been a change to a Contract Assumption during that part of the deployment); and
 - Connection Milestones during build and operations, for every 1,000 premises connected (new connections only);
- Clawback of savings in network build costs and connection costs, with such savings secured through three main mechanisms: (i) build related Contract Assumptions (section 5.4.3); (ii) deployment clawback (section 5.4.4); and (iii) Connection Milestone Payments (section 5.4.5);
- Cost overruns to be borne by NBPco, with the exception of cost increases that are directly attributable to build related Contract Assumptions (as described further below), which shall be borne by the Department up to a limit of the conditional deployment Subsidy. The contract provides for NBPco to bear all costs in excess of this limit.
- NBPco to be contractually committed to deliver the outcomes (i.e. standards of network build and performance) set out in the Contract and its Final Tender, subject to the Department's right to amend those obligations to mitigate additional costs that it would otherwise incur as a result of build related Contract Assumptions;
- NBPco to incur delay payments (i.e. deductions in Subsidy Payments) in the event of material delays to the achievement of deployment milestones (section 5.4.2). NBPco to also incur performance credits (i.e. repayment of subsidy) in the event that the network does not perform to the standards that it was contracted to achieve (section 7.5.2); and
- NBPco may forego its right to own the network (i.e. Government will have the right to take over the ownership of the network) if NBPco fails to complete the deployment of the network (or parts thereof) by the longstop dates stated in the contract (see section 5.4.2.3).

In addition, in light of the Bidder's proposed commercial and contractual structure (as described in section 5.2.3 above), the Department has incorporated additional governance arrangements into the Contract in order to protect the network deployment and the provision of services to end users over the full contract period and beyond. Our non-legal understanding of these arrangements is summarised as follows:

— [REDACTED]



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5.4.2 Incentives for NBPco to Complete the Deployment

There are financial and contractual incentives for NBPco to complete the network deployment within the required timescales. These are described below.

5.4.2.1 Delay payments

The contract provides that the subsidy that is payable on completion of network deployment in a Deployment Area will be reduced by [REDACTED] for every day that the network deployment is delayed by more than [REDACTED] (i.e. NBPco has a grace period of [REDACTED] for deployment delays). For example, if all [REDACTED] Deployment Areas are delayed by an average of [REDACTED] beyond the [REDACTED] period, NBPco will incur delay payments of [REDACTED]. The contract limits aggregate delay payments at [REDACTED]

5.4.2.2 Loss of revenues

The contract provides that NBPco will also suffer losses in revenues if there are delays in deployment (such losses resulting from delayed take-up of services by customers).

Sensitivity analysis provided by the Bidder in its Final Tender submission highlights the impact that material delays in deployment could have on NBPco shareholders' rate of return as a result of deployment delays of up to 12 months (which is the long-stop date, as discussed below). This is shown in Table 5.10 below.

Table 5.10: Impact of Delays on Equity IRR

Sensitivity	Equity IRR (25 years)	Equity IRR (10 years)
Base case	[REDACTED]	[REDACTED]
Deployment completion delayed by 6 months	[REDACTED]	[REDACTED]
Deployment completion delayed by 12 months (i.e. up to the longstop date for deployment completion)	[REDACTED]	[REDACTED]

Source: Bidder's Final Tender Project Financial Model



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5.4.2.3

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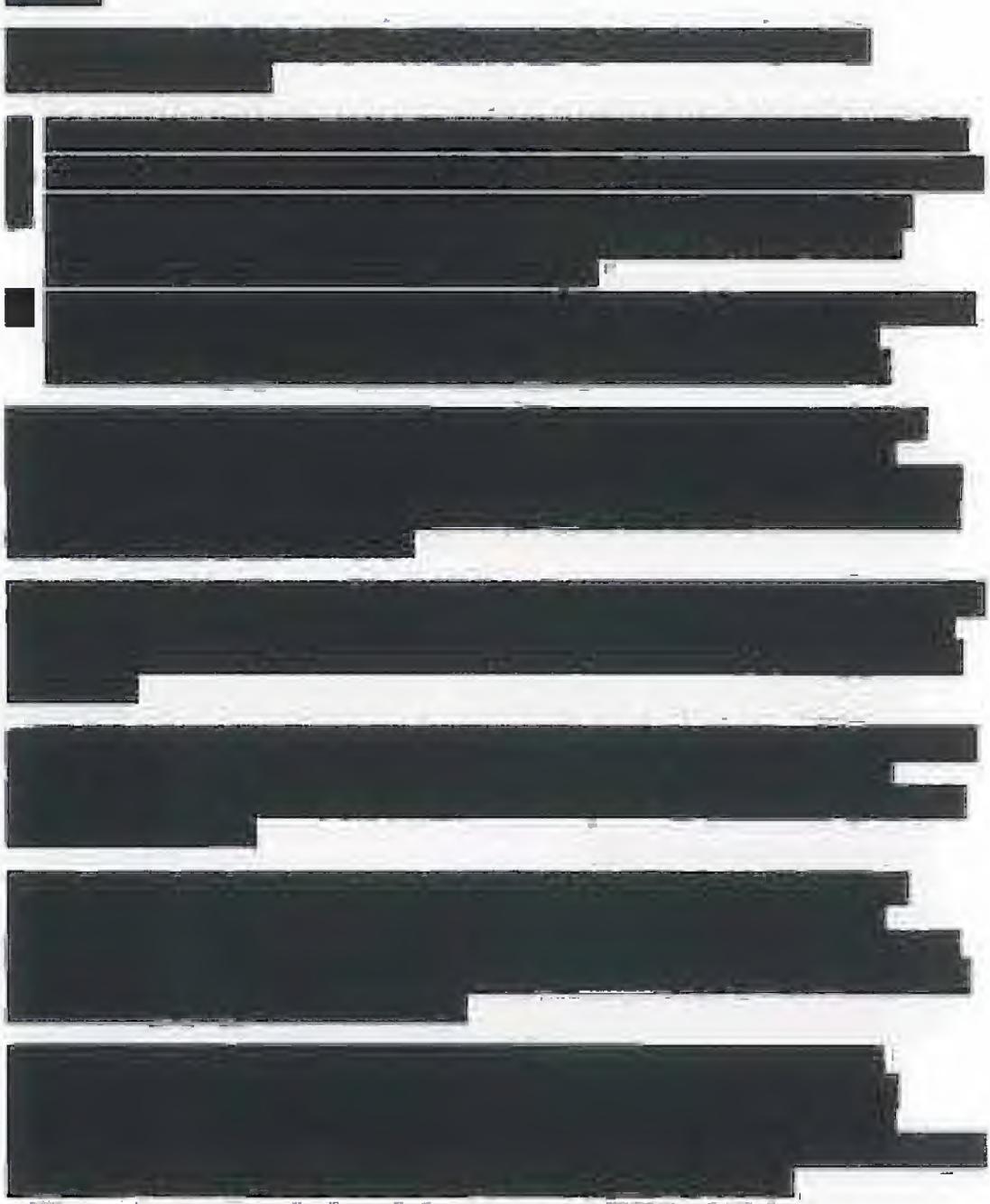
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5.4.3 Governance of Deployment Costs and SubsIdy

5.4.3.1



5.4.3.2 Rationale for Build Related Contract Assumptions

The primary mechanism through the contract provides for Government to share the deployment risk associated with the state-led intervention is build related Contract Assumptions.

Build related Contract Assumptions seek to address the most significant "build cost risks", the price for which might otherwise have been included as additional costs in the Bidder's Project Cost Model, resulting in a higher subsidy requirement. Under this mechanism, the contract (if implemented appropriately) provides that the cost should now only be incurred by Government if the risk actually materialises.

The build related Contract Assumptions provide a mechanism through which the Department can work with NBPco to proactively manage and mitigate adverse cost variances during network build, with the contract requiring NBPco to substantiate each claim for additional subsidy based on the identified cost variances directly associated with build related Contract Assumptions. The mechanism is described below.

5.4.3.3

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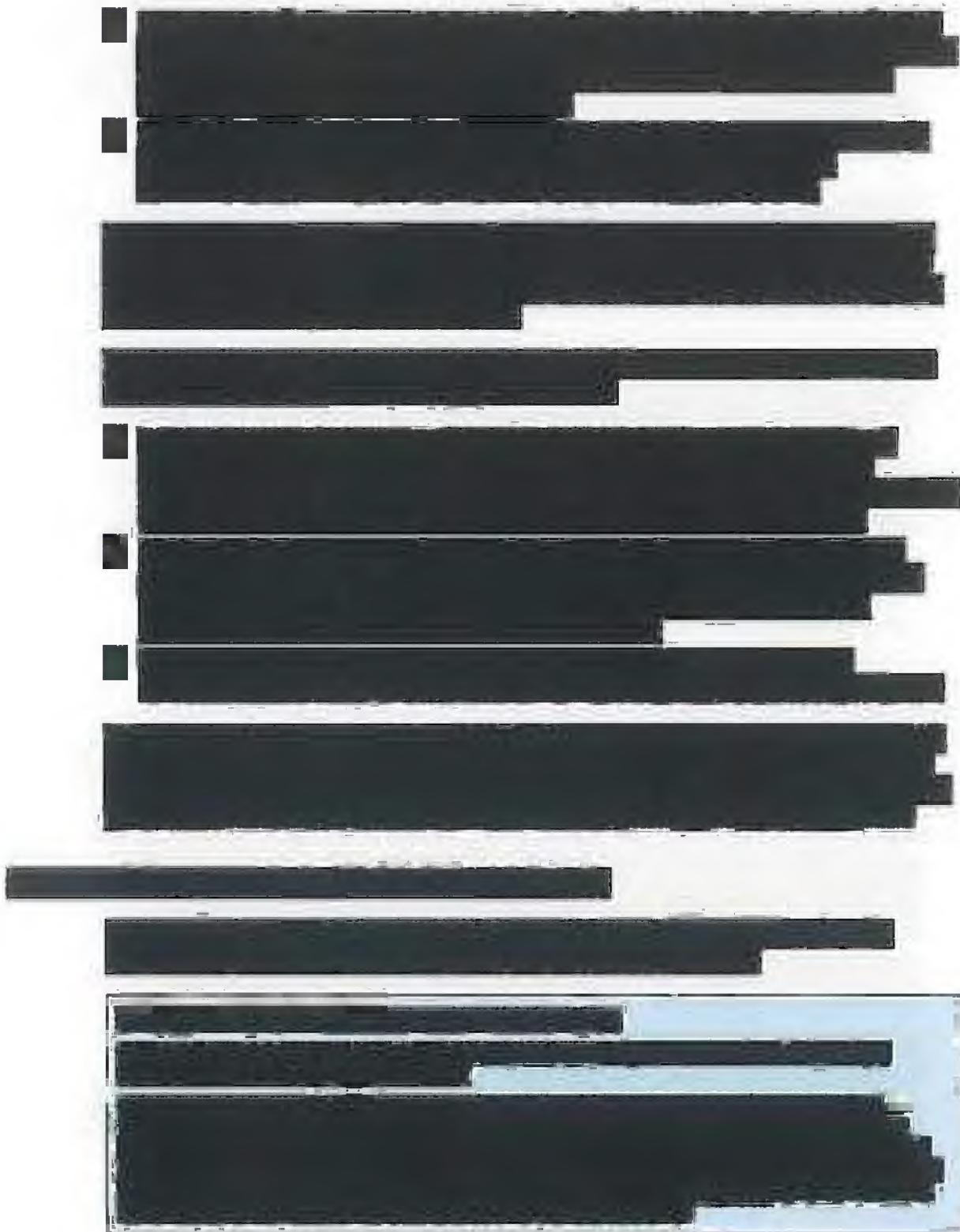
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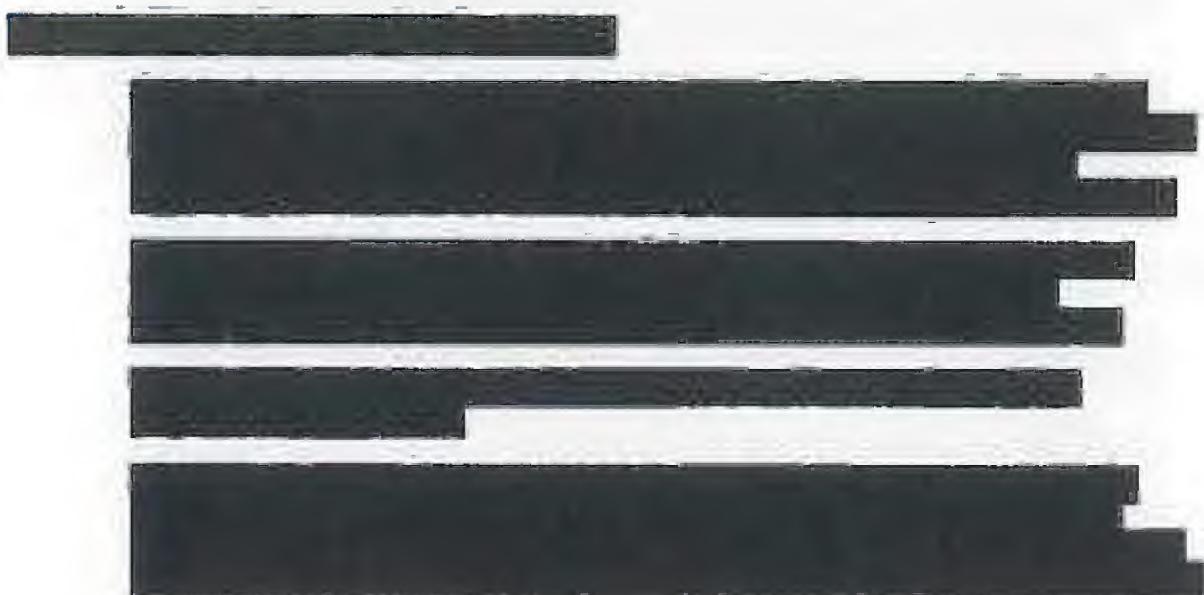


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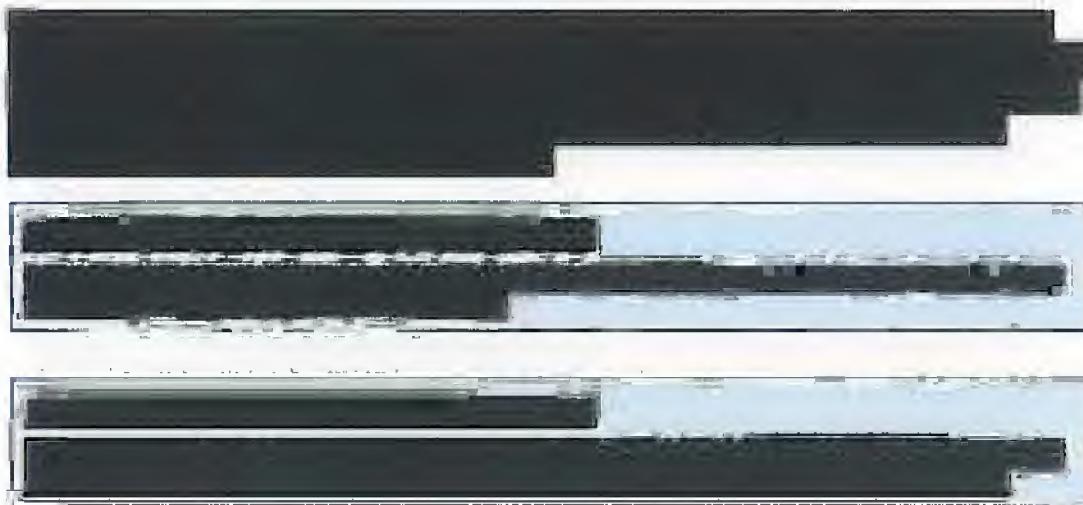
5.4.4 Deployment Clawback



5.4.4.2 Potential for deployment clawback



5.4.4.3 Deployment clawback percentages



5.4.5 Connection Cost "Clawback"



5.4.6 State Aid Intensity

The maximum state aid intensity of the Project is expected to be set at 90% in the state aid notification. This means that, when considered on a NPV basis over the 25 year contract term, the public subsidy provided by the Department to NBPco cannot exceed 90% of the Permitted Expenditure actually incurred by NBPco.

The basis for the state aid intensity calculation is set out in information published by the European Commission⁵¹, which describes the basis for the NPV approach and the applicable discount rate. We believe this information remains valid, however this should be confirmed by the Department in their discussions with the Commission.

The maximum state aid intensity effectively acts as a limit on subsidy that needs to be checked whenever the ratio of subsidy payments to Permitted Expenditure changes, for example as a result of:

- The provision of additional connection milestone payments;
- The provision of conditional subsidy as a result of Contract Assumptions;
- The sharing of savings in deployment costs through the deployment clawback mechanism; and
- The sharing of savings in connection costs through the connection mechanism.

It is our understanding that savings generated under the IRR clawback mechanism would not be taken into consideration in calculating compliance with this limit (i.e. as the sharing of higher than forecast net revenues does not relate to savings in Permitted Expenditure for which the capital related subsidy is provided), however KPMG are not the state aid advisers on the Project and accordingly this understanding should be checked by the Department.

⁵¹ COMMISSION REGULATION (EU) No 651/2014 of 17 June 2014 and OJEU Information and Notices C14 dated 19 January 2008

5.5 Conclusions on Network Build

This section of the report has presented a detailed review of:

- the Bidder's solution for network build (in technical and contractual terms);
- the Bidder's forecast costs of network build (for passing and connecting premises);
- the current allocation of risk for network build; and
- the proposed governance arrangements for network build.

The review has shown that whilst the Bidder's solution for network build is in most cost categories broadly in line with expectations (prior to margin/contingency), the Bidder has put forward a higher pricing approach for the pass and connect network. We have therefore set out a number of recommendations to try and strengthen the Government's position in each of these areas.

Section 5.1 set out our views on "what Government needs" in respect of Network Build. As some of the cost assumptions are higher than expected, we have made recommendations on areas where the Government could push for a more equitable sharing of upside in light of the level of subsidy being invested into the project.

With this in mind, the findings of this section of the Single Bidder Solution Assessment report (which draw extensively on the analysis undertaken by Analysys Mason), when taken together with the findings of the previous section (Network Ownership) and the results of the tender evaluation, indicate that:

- The Bidder has the technical capacity to deploy the network within the required timescales;
- Indications to date are that deployment risk is likely to be appropriately allocated within the contractual structure proposed by the Bidder;
- The assumptions in the Bidder's Project Cost Model as regards volume and cost of the solution proposed are appropriate for the Bidder's technical solution and include an appropriate level of contingency to cover the deployment risk that NBPco will bear (noting the recommendations made previously in this regard);
- NBPco and its key subcontractors have the financial capacity to complete the network deployment, taking into account the risk of cost overruns;
- The NBP contractual framework incorporates appropriate safeguards, assuming implemented appropriately, (covering both NBPco and its key subcontractors) to address the State Aid Guidelines, the NBP Intervention Strategy and the Public Spending Code, including:
 - Appropriate levels and use of public subsidy;
 - Appropriate technical and financial transparency in respect of network build;

- Appropriate claw back of public subsidy if the permitted expenditure actually incurred during deployment is less than forecast in the Project Cost Model; and
- Appropriate governance arrangements to ensure that potential savings in permitted expenditure are identified and realised by NBPco (to facilitate claw back);

It will be important for the Department to have a properly resourced and skilled team to implement the various protections drafted into the contract in this regard and to appropriately monitor the delivery of the NBP contract;

- There are appropriate financial and contractual incentives for NBPco to complete the network deployment within the required timescales; and
- The Department has the option (should it so desire), or obligation in certain specific scenarios, to take-over the deployed network and to complete the network deployment if NBPco is unable or unwilling to complete the network deployment itself.

Our conclusions section (section 10) maps the key findings and recommendations of this section onto the key requirements set out above.

6 Network Access

6.1 What Government Needs

The Bidder's technical solution is a fibre to the premises (FTTP) network, utilising existing physical infrastructure where possible to establish the fibre network (section 5.2). Of the [REDACTED] total network length (to pass and connect premises) [REDACTED] is to be built using existing infrastructure [REDACTED] on poles and [REDACTED] in ducts). The Bidders tender includes a cost of [REDACTED] over 25 years for NBPco to access and use this existing network infrastructure ("Network Access"). This is treated as Permitted Expenditure in subsidy terms, as it is a direct cost of establishing the wholesale network and is an alternative to capital investment on new build infrastructure. This [REDACTED] cost of Network Access is therefore a key driver of the level of subsidy required from Government.

In respect of this "Network Access", this report seeks to consider whether:

- NBPco will have the ability to access this existing network infrastructure for at least the term of the NBPco contract (25 years);
- The price to be paid for this network access is appropriate and no more than would otherwise be payable for a commercial network deployment; and
- There are appropriate contractual or regulatory controls in respect of changes in the network access charges during the 25 year contract term.

6.2 Solution Summary

6.2.1 Re-use of Existing Infrastructure

DCCAE is the relevant government department responsible for the telecoms and media sector. The regulator for communications is the Commission for Communications Regulation (ComReg).

In accordance with paragraph 78(f) of the State Aid Guidelines for Broadband⁵², the Department has encouraged the re-use of existing infrastructure for the NBP. By complying with this directive, capital costs and construction risks should be reduced and it should enable the NBP to be deployed more quickly using existing infrastructure.

The applicable existing infrastructure in Ireland that can support this, is owned and managed by a combination of State and semi-state companies, including but not limited to, the Metropolitan Area Networks (MANs), owned by the State and managed as a concession by eNet; the Electricity Supply Board (ESB), which has permitted Siro

⁵² EU Guidelines for the application of State aid rules in relation to the rapid deployment of broadband networks (2013/C 25/01)

to deploy fibre cable on the electrical infrastructure; and private organisations such as eir. Currently the only infrastructure provider subject to regulation (by ComReg) is eir.

6.2.2 Role of Regulation

Ireland has implemented the European regulatory framework governing electronic communications by way of primary and secondary legislation⁵³.

One of these regulations is the Framework Regulation⁵⁴ that sets out the market analysis procedure required in the telecoms market. This regulation requires the regulator (ComReg) to carry out an analysis of the relevant markets and where the regulator determines that a relevant market is not effectively competitive, the regulator shall designate undertakings to have a Significant Market Power (SMP) on that market. Where an undertaking is designated as having SMP, the regulator shall impose appropriate specific regulatory obligations (i.e. remedies) in the market.

A number of markets are subject to ex-ante regulation, this includes the wholesale (physical) network infrastructure access at a fixed location market. This includes the poles and duct market which NBPco will rely on for its Network Access.

Eir has been designated as having SMP in this market. The remedies imposed on Eir by ComReg include obligations in respect of network access, transparency, non-discrimination, accounting separation, price control and costing account obligation⁵⁵.

6.2.3 Bidder's Solution



Table 6.1 below shows the percentage of the network infrastructure (poles and ducts) that is expected to be rented from eir (based on the Bidder's Project Cost Model). This includes the network infrastructure required to traverse the eir 300k area ("Excluded Area") in order to reach the premises in the Intervention Area. The Bidder has stated that eir will provide [REDACTED] of the infrastructure access products that it requires for its solution, with enet providing the remainder.

⁵³ Primary legislation consists of the Communications Regulations Acts 2001-2011

⁵⁴ <http://www.irishstatutebook.ie>

⁵⁵ Please note this list of obligations is not exhaustive.

Table 6.1: Percentage of network infrastructure owned by eir

Solution element	Bidder Total	Owned by eir	Percentage
Total UG duct length (km)			
Duct in Excluded Area			
Duct in Intervention Area			%
Total number of poles			
Poles In Excluded Area			
Poles In Intervention Area			

Source: Project Cost Model

Given the high percentage of network infrastructure that is to be rented (rather than built), it is important that the Government has the assurance that NBPco will have the right to access this existing network infrastructure for the full term of the NBPco contract (25 years), and for an appropriate period thereafter (so that the network and services will continue to be available after the end of the contract period).

6.2.4 Infrastructure Access Agreements

As part of its Final Tender (Contract Question 2C) the Bidder submitted draft copies of the Infrastructure Access Agreements (IAA) that it will require with eir and enet.

6.2.4.1

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Whilst we understand from the Department that significant progress has been made to [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

6.3 Network Access Costs

6.3.1 Regulation of Access Prices

The regulated price of access to eir pole and duct infrastructure is set out in ComReg Decision Notice D03/16⁵⁶ (issued in May 2016), for the period 2016 to 2021.

The regulated price for pole access is influenced by a number of factors including: (i) the number of poles to which access is required; (ii) a replacement factor (covering the periodic costs of pole replacement); and (iii) the number of operators (including eir) with

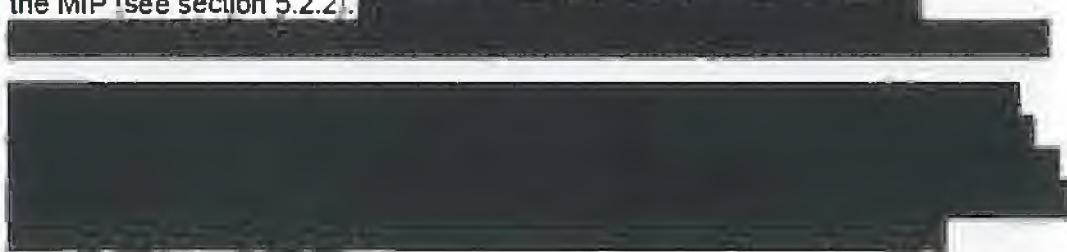
⁵⁶ https://www.comreg.ie/csv/downloads/ComReg_1639.pdf

access to those poles. For example, if there are two operators using a pole, each operator will pay half of the regulated price.

The regulated price for duct access is influenced by the length of duct to which access is required, the type of duct, and whether it is located in carriageway, footway or verge.

ComReg has acknowledged the importance of eir's infrastructure access products for the success of the NBP through its issue in June 2018 of an Information Notice notifying the market that where "NBP Specific Product Process Enhancements" are required for the purposes of the NBP state-led intervention, eir does not have to offer these product enhancements to the market generally. We understand that this means that eir is able to provide product and process enhancements specifically for NBP purposes at a lower cost and in a shorter timeframe than would normally be required under regulation.

As a result, in advance of submitting its Final Tender, we understand from the Department that eir provided the Bidder with regulated prices that are adjusted to reflect the scale of the infrastructure rental proposed by the Bidder and the existence of the MIP (see section 5.2.2).



Changes to the eir infrastructure access price are addressed in section 6.3.3 below.

6.3.2 Summary of Access Costs in Bidder's PCM

As shown in Table 6.2 below, the Bidder has estimated the direct cost of pole and duct rental to be [REDACTED] over 25 years (there is no margin or contingency added to these costs). This pole and duct rental cost is [REDACTED] than the Department's Budget Cost Model. The main reason for this difference is that the Budget Cost Model bases its unit costs for pole and duct rental on ComReg's regulated prices.



Table 6.2: Infrastructure Access Costs

Infrastructure Access Costs (Total nominal cost 25 years)	Bidder's Project Cost Model (€ million)	DCCAE Budget Cost Model (€)	Difference (€)	Difference %
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: Analysys Mason

Analysys Mason has concluded⁵⁷ that,

[REDACTED], this pole and duct rental cost is robust.

6.3.3 Potential Changes to Access Prices

6.3.3.1 Decommissioning of eir's copper network

The Department has also met with ComReg to discuss and seek feedback on the price proposed by eir for access to its infrastructure for the NBP, and to understand how regulation might impact this price negatively or positively over the life of the contract.

As explained above, the basis for calculating pole access prices (as set out in the ComReg Decision Notice) means that the decommissioning of Eir's copper network will have an impact on the price payable by NBPco for the use of eir's pole infrastructure (as there will be one less operator requiring access to / use of the poles). In most cases it will result in NBPco, as the sole user of the poles, paying the full regulatory price of pole access from the time the copper network is decommissioned.

[REDACTED]

⁵⁷ Technical Solution Assessment Methodology Report, November 2018, Analysys Mason



6.4 Governance

Governance of Network Access falls into two main areas:

- Post build Contract Assumptions; and
- Liaison with ComReg.

6.4.1 Post Build Contract Assumptions

The following post build Contract Assumptions relate to risks and uncertainties relating to Network Access that are assumed to be outside of NBPco's control, which could impact the viability of the Project or the amount of subsidy that can be justified under the gap funding model:



Annex 5 of Schedule 6.2 (Change Control) of the Contract sets out the processes and terms through which these Contract Assumptions will be governed. It will be important that the Department has an appropriately resourced and skilled team in place to undertake this governance role.

Post build Contract Assumptions address the most significant "operational risks", the price for which may otherwise have been included as additional risk costs in the Bidder's Project Cost Model, resulting in a higher subsidy requirement. As provided under the contract (if implemented appropriately) this mechanism should mean that the risk cost will now only be incurred by Government if the risk actually materialises.

6.4.1.1



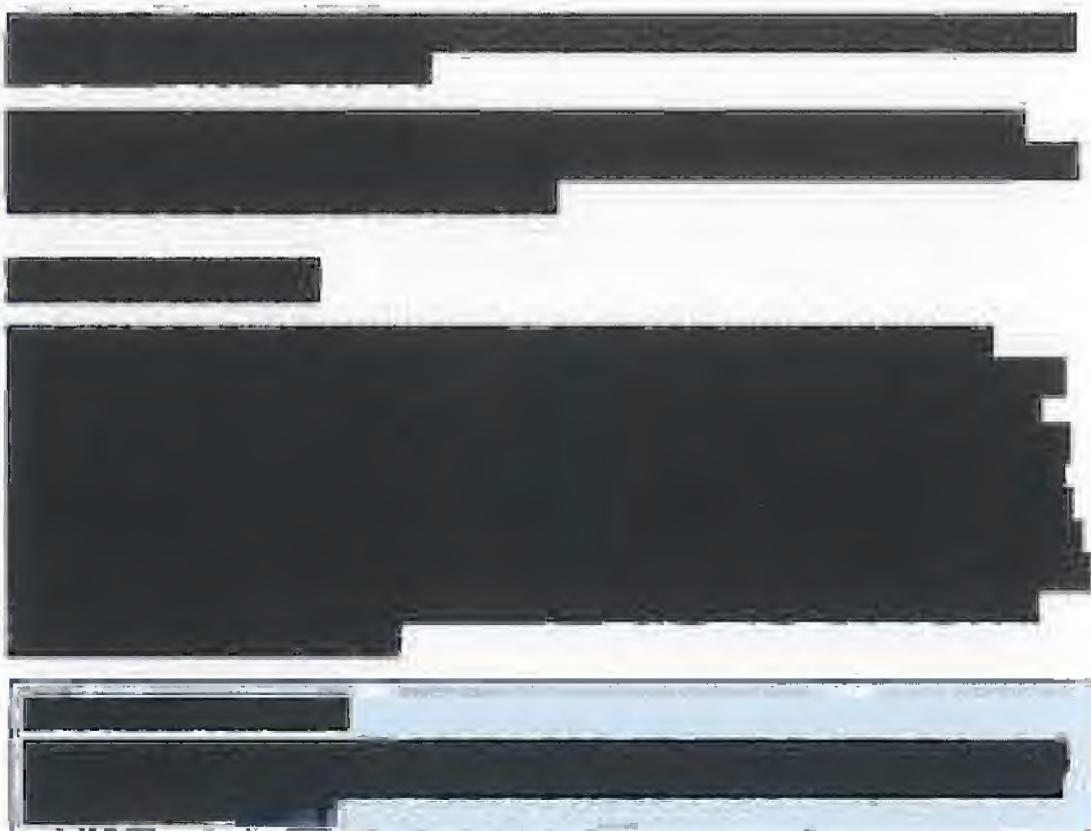


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6.4.2



6.5 Conclusions on Network Access

With reference to section 6.1 above, which considers "what Government needs" in respect of "Network Access", the findings of this section of the Single Bidder Solution Assessment report indicate that:

- Subject to satisfactory completion of the Infrastructure Access Agreements prior to contract award, if implemented appropriately, the IAA should include a mechanism for NBPco to have the contractual ability to access the existing network infrastructure that its solution requires for at least the term of the NBPco contract; and
- Provided the contractual provisions described in this section are included in the final NBP contract (and implemented appropriately) and the Department maintains appropriate governance arrangements in respect of the contract and its relationship with ComReg (and providing that eir's products will continue to be subject to regulation throughout the term of the contract):
 - The price to be paid for this network access should be no more than would otherwise be payable for a commercial network deployment; and
 - There should be appropriate contractual or regulatory controls in respect of changes in the network access charges during the 25 year contract term.

7 Network Operation

7.1 What Government Needs

The NBP state-led intervention is not only about the establishment of a high speed broadband network for 536,000 premises in Ireland. The intervention is also intended to secure the continued provision of those broadband services for at least 25 years.

In order to consider whether NBPco has the capability to take on this long term commitment, the Government needs to consider whether, in respect of the "Network Operation":

- The Bidder has the technical capacity to operate the network to meet the required service levels throughout the contract period;
- Operating risk is appropriately allocated within the NBP contract;
- The Bidder's Project Cost Model operating cost assumptions are appropriate for the Bidder's technical solution and include an appropriate level of contingency to cover the operational risk that NBPco will bear;
- NBPco and its key subcontractors have the financial capacity to maintain and operate the network, taking into account the risk of cost overruns. This is also considered in section 4 of this report;
- The NBP contractual framework incorporates appropriate safeguards (covering both NBPco and its key subcontractors) to address State Aid Guidelines, the NBP Intervention Strategy and the Public Spending Code, including:
 - Appropriate levels and use of public subsidy;
 - Technical and financial transparency in respect of network operation;
 - Governance of wholesale access and prices;
 - Appropriate clawback of public subsidy if the financial performance of NBPco following deployment is better than forecast in the Project Financial Model; and
 - Appropriate governance arrangements to ensure that potential savings in operational expenditure are identified and realised by NBPco (to facilitate clawback);
- There are appropriate contractual and financial incentives for NBPco to maintain the network and achieve the required service levels throughout the contract period; and
- The Department has the option to take-over and operate the network (should it so desire) if NBPco is unable or unwilling to operate the network in accordance with the contract.

7.2 Solution Summary

7.2.1 Operating structure and responsibilities

In respect of the operation of the network, it is proposed by the Bidder that NBPco will enter into:



7.2.2 NBPco's allocation of operating risk

It is proposed by the Bidder that NBPco will allocate operating risk through its infrastructure access and subcontract agreements as described above. Whilst the terms of these agreements are still to be finalised, it is our non-legal understanding from the draft agreements / heads of terms that, subject to post build Contract Assumptions and any derogations within the NBP contract, the intention is that the subcontracts will flow down to infrastructure access providers and subcontractors NBP contract terms that are appropriate (in the current market) for the those services they are contracted to provide (as described above).

It is proposed that NBPco will therefore bear the operating cost and performance risk associated with the management services it provides, as well as being responsible for "wrapping" the infrastructure access agreements and subcontracts in order to deliver the full service requirements over the 25 year contract period for the price committed to in the Project Cost Model, subject to post build Contract Assumptions.

Action (Pre-Contract Award): Infrastructure Access Agreements and Subcontracts

IAAs and subcontracts to be completed by the Bidder and reviewed by DCCAE for consistency with the NBP contract. Bidder to finalise its IAAs and subcontracts to the satisfaction of the Department prior to the award of the NBP contract

It is our understanding that all of the Infrastructure access providers and subcontractors named above are experienced telecom network contractors and, [REDACTED] they were already assessed for financial standing and professional and technical capability (as applicable) at the prequalification stage. As the prequalification assessment examined financial standing as at Q1 2016, we recommend that this financial standing assessment is updated [REDACTED] prior to contract award to examine each key subcontractor's current financial standing in terms of its ability to deliver the role that is now expected of it in the Bidder's Final Tender.

Action (Pre-Contract Award): Financial Standing

Assessment of financial standing to be updated prior to contract award. In order to confirm that each of the Bidder's key subcontractor's has the financial standing necessary to deliver its role on the Project. This action should apply to both deployment and operations.

7.3 Network Operating Costs

7.3.1 Network Design (Operations)

As explained in section 5.3.1, it is important to be cognisant of the inherent differences between the Bidder's Final Tender Project Cost Model and the Department's Budget Cost Model when comparing the results of the two cost models (as not all comparisons will be on a like for like basis). Whilst both cost models deliver the same minimum requirements (set out in the NBP contract), there are differences in the solutions that have been assumed by each cost model to deliver these requirements. This applies to operations in addition to deployment.

The main differences that relate to "Network Operation" can be summarised as follows. The estimated contribution of each of these differences to the overall difference in operating costs in the Bidder's PCM and the Department's Budget Cost Model is summarised below and is explained further in this report and Analysys Mason's report.

Table 7.1: Differences between the Budget Cost Model and Bidder's PCM

Item	Budget Cost Model	Bidder's Project Cost Model	Indicative contribution to difference (C)
Infrastructure rental	<ul style="list-style-type: none"> Assumed regulated price for pole and duct access (see section 6) 	[REDACTED]	[REDACTED]

Item	Budget Cost Model	Bidder's Project Cost Model	Indicative contribution to difference (C)
OSS/BSS rental	<ul style="list-style-type: none"> OSS/BSS hosted within NBPCo premises (capex model) 	<ul style="list-style-type: none"> ██████████ 	<ul style="list-style-type: none"> ██████████
OSS/BSS change request	<ul style="list-style-type: none"> Assumed zero (i.e. covered by contract change control) 	<ul style="list-style-type: none"> ██████████ 	<ul style="list-style-type: none"> ██████████
Network O&M	<ul style="list-style-type: none"> Assumes substantial proactive and reactive maintenance No strategic connection point (SCP) O&M costs. SCPs were not in the contract when the Budget Cost Model was prepared) 	<ul style="list-style-type: none"> ██████████ ██████████ 	<ul style="list-style-type: none"> ██████████ ██████████
Overheads	<ul style="list-style-type: none"> Total overheads such as centralised staff costs and non-network costs assumed to be █████ of total opex. 	<ul style="list-style-type: none"> ██████████ 	<ul style="list-style-type: none"> ██████████
Margin and contingency	<ul style="list-style-type: none"> No contingency assumed for opex No margins assumed 	<ul style="list-style-type: none"> ██████████ ██████████ ██████████ ██████████ 	<ul style="list-style-type: none"> ██████████
Other opex	<ul style="list-style-type: none"> Non-material 	<ul style="list-style-type: none"> ██████ 	<ul style="list-style-type: none"> ██████

Source: Analysys Mason & Bidders Final Tender PCM Cost Memorandum

7.3.2 Resources to Repair and Maintain the Network

Analysys Mason has analysed the Bidder's resource assumptions in relation to the repair and maintenance of the network. The analysis is set out in Analysys Mason's report⁵⁸, and the conclusion of the analysis are as follows.

Network repair and maintenance constitutes the single largest network-related operating cost in the Bidder's PCM⁵⁹. In order to size its network repair and

⁵⁸ Technical Solution Assessment Methodology Report, November 2018, Analysys Mason

⁵⁹ Note that the repair and maintenance function is subcontracted.

maintenance function the Bidder assumes a network fault rate of [REDACTED] faults per 100 connections per annum. This is within the service level of 8.0 faults per 100 connections per annum stated in the contract [REDACTED].

Analysys Mason has concluded that:

- the Bidder's assumption of [REDACTED] faults per 100 lines per annum is reasonable and in line with the contract and their experience; and
- the dimensioning of the Bidder's team to fix faults is in line with the assumed number of faults per day and is slightly conservative [REDACTED] but not unreasonable.

Furthermore, the DCCAE's operational evaluation team has confirmed that the Bidder has provisioned sufficient resources in its network operations centre, front desk, field force and operational performance teams to operate and maintain the network to deliver the service level agreements.

Accordingly, a combination of Analysys Mason and DCCAE's operational evaluation team have concluded that the Bidder's assumptions in relation to resourcing of network repair and maintenance appear reasonable.

7.3.3 Operating Costs

7.3.3.1 Analysis of operating costs

Table 7.2 below compares the total operating expenditure forecast in the Department's Budget Model and the Bidder's Final Tender Project Cost Model. Analysys Mason has grouped the operating costs into eight categories (excluding margins / contingency) in order to aid the comparison between the two models.

Table 7.2: Comparison of Total Operating Expenditure over Contract Period

Total operating expenditure	Budget Cost Model (€ million)	Bidder Final Tender PCM (€ million)	Difference (€ million)	Difference (%)
Network O&M	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Total operating expenditure	Budget Cost Model	Bidder Final Tender PCM	Difference (€ million)	Difference (%)
	(€ million)	(€ million)		
Pole and duct rental				
Co-lo rental				
National backhaul				
OSS/BSS rental, O&M and licenses				
OSS/BSS change request				
Other opex				
Indirect and non-network costs				
Total opex (excluding margins/contingencies)				
Margins / contingency				
Total opex				

Source: *Analysys Mason*

Analysys Mason's assessment of the operating costs in the Bidder's PCM is as follows.

Completeness of the operating costs in the PCM

Analysys Mason believes that all material operating cost elements have been included in the Bidder's PCM.

Network O&M and IT & Communications

As set out in section 7.3.2 above, Analysys Mason believes the Bidder's assumptions in relation to resourcing of network repair and maintenance to be reasonable.

With the increasing virtualisation of network functions, the distinction between "IT" and "Network" staff is getting more blurred and therefore the comparative cost of IT and Network O&M categories should be considered together. The total costs for IT, communications and Network O&M is provided in Table 7.3 below.

Table 7.3: Comparison of Network O&M and IT & Communications Opex

Model	Network O&M	IT & Communications	Total
Bidder FT PCM			
Budget Cost Model			

Source: *Project Financial Model*

In the round, if we compare the total costs for IT, communications and Network O&M, then the Bidder's PCM and the Budget Cost model are within [REDACTED] of each other. On

that basis, according to Analysys Mason the Bidder's Network O&M cost assumption and IT & communications cost assumptions appears reasonable.

Pole and duct rental

In its Cost Memorandum (which supports the PCM), the Bidder has indicated that the provision of pole access via the Openeir MIP has been agreed in principle. Although the pole and duct access prices remain to be finalised

Another reason for this difference is that the Budget Cost Model assumed infrastructure re-use factors for poles and ducts whereas the Bidder's PCM uses the Openeir infrastructure database, which provides the actual location for each pole and duct and therefore increases the accuracy of infrastructure rental volume calculations. Effectively, the Bidder's PCM network design is based on better information than was available to DCCAE at the time the Budget Cost Model was prepared.

As a result, Analysys Mason believe that the pole and duct rental costs are reasonable.

Co-lo rental

Excluding margin and contingency the Bidder's PCM assumes a co-location rental cost that is [REDACTED] than the Budget Cost Model. The main reason for this difference is that the Bidder's PCM is designed around [REDACTED] rented co-location facilities compared to [REDACTED] in the Budget Cost Model. Analysys Mason has therefore concluded that this difference is understandable and that the costs are reasonable.

National backhaul

The Budget Cost Model assumes a capital investment model for national backhaul and so allows for zero operating costs under this category. The Bidder's PCM assumes an operating cost model for backhaul, whereby national backhaul is rented from [REDACTED] as a managed service at a cost of [REDACTED]. For reference, the capital cost allowed for in the Budget Cost Model for the core network was [REDACTED].

Analysys Mason has concluded that an operating cost model for national backhaul is consistent with the Bidder's operational model and that the cost in the PCM is reasonable.

OSS/BSS rental, O&M and licenses

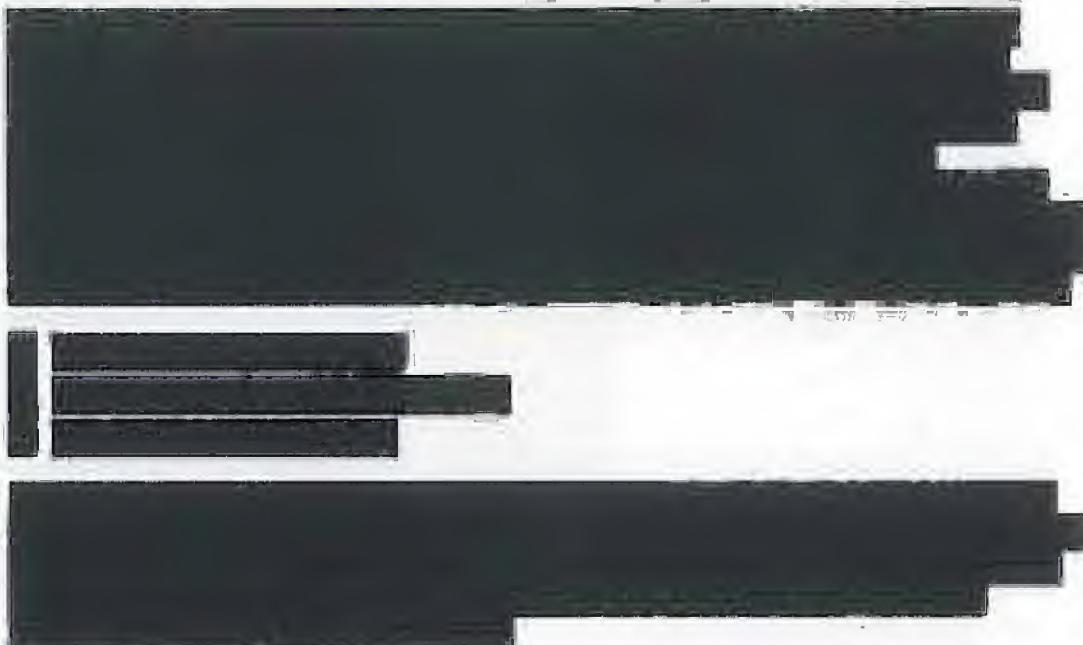
The Bidder's PCM assumes an operating cost model for OSS/BSS rental, whereby the solution will be hosted in the cloud. The OSS/BSS rental, O&M and licenses costs category for this solution therefore includes:

- [REDACTED] for renting hardware/virtual machines from [REDACTED] for hosting in the cloud;
- [REDACTED] for firewall;
- [REDACTED] in licenses for the different OSS/BSS software components;
- [REDACTED] in O&M which includes bug fixes and software upgrades; and
- [REDACTED] for other costs.

By way of comparison, the Budget Cost Model assumes a capital investment model for OSS/BSS where the solution would be owned by NBPCo and hosted within its premises. As a result the Budget Cost Model allows for zero operating costs under this category.

Analysys Mason has concluded that the OSS/BSS rental, O&M and licenses cost is consistent with the Bidder's operational model and that the OSS/BSS rental cost is reasonable.

OSS/BSS change request





Other opex

Remaining network costs which are categorised as “other opex” for the purposes of this review include vehicle rental and performance monitoring. Given its quantum, Analysys Mason do not have any major concerns regarding this cost category.

Indirect and non-network costs

Non-network overheads (including property, insurance, marketing costs) as well as indirect network costs (e.g. finance and HR) are categorised as indirect and non-network costs for the purposes of this review. Figure 7.4 below provides a breakdown of non-network overheads.

Table 7.4: Comparison of Indirect and Non-Network Costs over Contract Period

Indirect and Non-Network Costs	Budget Cost Model (€ million)	Bidder Final Tender PCM (€ million)	Difference (€ million)	Difference (%)
Indirect Network Costs				
Product Management				
Finance and HR				
IT and Communications (assessed above)				
Accommodation				
General Management				
Opex Risk Contingency				
Performance Bond				
Subtotal				
Insurance ⁶²				
Bid costs				
Total				

Source: Analysys Mason

⁶² Insurance was not separately identified in the Budget Cost Model as it was assumed to be included in the percentage allowances for indirect network costs, product management and finance and HR

Excluding margin and contingency, the Bidder's PCM assumes a total indirect and non-network costs that are [REDACTED] greater than the Budget Cost Model [REDACTED] difference).

Analysys Mason and KPMG have reviewed the most material differences listed below and our combined findings are set out in the paragraphs that follow:

- Insurance;
- Indirect network cost;
- General Management; and
- [REDACTED]

Insurance

[REDACTED]

In addition, Marsh has recommended that the Bidder provides the broking slips provided to the markets in order to obtain quotes so the Department can check that a fair and accurate representation of risk has been provided to Insurers. This provides an opportunity to review other policy terms, conditions, warranties and exclusions etc.

Indirect network cost

In the Budget Cost Model, indirect network costs (including rates) were calculated using a top-down approach and it was assumed that they represented [REDACTED] of the overall network O&M budget. However, the Bidder's PCM has included a specific assumption for commercial rates in its indirect network costs, which at [REDACTED] comprise more than [REDACTED] of its indirect network costs.

General Management

In the Budget Cost Model, the general management costs are derived using a bottom-up approach based on comparable organisations in Ireland [REDACTED]

The Bidder has however assumed a more top heavy organisational structure than the Budget Cost Model, with a substantial proportion of staff at management grade or above. The Bidder has assumed more than [REDACTED] FTE whereas the Budget Cost Model assumes [REDACTED] FTE⁶⁴.

In addition, the Bidder is proposing to utilise a larger percentage of consultants relative to the Budget Cost Model, which require [REDACTED] higher wages than salaried employees. The Bidder has also included contingency allowances in respect of some staff costs (particularly management) and there appears to be some duplication of roles.

Whilst the cost assumptions included by the Bidder are higher than expected, it is based on their view of the most appropriate organisational staffing model. It is not possible to be definitive on whether the Bidders organisational staffing approach is more or less appropriate than that assumed in the Budget Model.



7.3.3.2 Contingency on operating costs

As noted in section 7.3.3.1 above, the Bidder has included [REDACTED] of contingencies in operating costs which represents [REDACTED] of the total operating costs. Table 7.5 below summarises the contingencies that have been applied in respect of operating costs [REDACTED]

Table 7.5: Contingency on Operating Costs

Cost area	Contingency %	Bidder commentary
Network costs associated with NOC and OLT, as well as NBPco/Contractor costs associated with repair & maintenance, pole maintenance.	[REDACTED]	[REDACTED]
Vehicle rental, pole testing & replacement, hedge trimming and repair M&S	[REDACTED]	[REDACTED]
IT, technology and network operations costs	[REDACTED]	[REDACTED]
Recruitment costs	[REDACTED]	[REDACTED]
Senior management	[REDACTED]	[REDACTED]

Cost area	Contingency %	Bidder commentary
Consultants	[REDACTED]	[REDACTED]
OSS/BSS and OSS/BSS change requests and office fit out	[REDACTED]	[REDACTED]

Action (Pre-Contract Award): Operating subcontracts and contingencies
The operating subcontracts are to be completed by the Bidder and reviewed by DCCAE for consistency with the NBP contract. Bidder to finalise these agreements to the satisfaction of the Department prior to the award of the NBP contract.

7.3.3.3 Conclusions on operating costs

The total operating cost in the Bidder's PCM is circa [REDACTED] than that of the Budget Cost Model (before contingency) or approximately equal when contingency is included. All of the material operating cost elements have been included in the Bidder's PCM.

Operating costs includes a positive difference compared to the Budget Cost Model of circa [REDACTED] in pole and duct rental costs, which arises from [REDACTED]

Whilst the Bidder's overall forecast for operating costs appear to be almost in line with the Department's Budget Model at an aggregate level, if pole and duct rental costs are excluded from the operating costs comparison for this reason, it is evident that the aggregate of all other categories of operating cost are higher than the Department's Budget Model as shown below.

Table 7.6: Comparison of Operating Expenditure Excluding Pole & Duct Rental

Total operating expenditure	Budget Cost Model (€ million)	Bidder Final Tender PCM (€ million)	Difference (€ million)	Difference (%)
Total operating expenditure including contingency but excluding pole and duct rental	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

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7.4 Network Operating Revenues

7.4.1 Comparison of Revenues

Table 7.6 below compares the total operating revenue forecast in the Department's Budget Model and the Bidder's Final Tender Project Finance Model.

Table 7.6: Comparison of Operating Revenue over Contract Period

Total revenue from operations	Budget Model March 2018	Bidder Final Tender PFM	Difference (€ million)	Difference (%)
	(€ million)	(€ million)		
Monthly rental revenue				
Connection & churn revenue				
Other revenue				
Total revenue				

Source: Bidder's Project Financial Model and Department's Budget Model (March 2018)

The Bidder's PFM assumes lower revenues than the Department's Budget Model. This difference is driven by the monthly rental revenue, for which the Bidder has forecast revenues of [REDACTED], which is circa [REDACTED] than the Department's Budget Model. The Bidder has assumed higher connection and churn and other revenues than the Department [REDACTED]

The differences in monthly rental revenues are driven by two main issues:

- Wholesale product prices; and
- Assumptions in relation to addressable premises and the assumed rate of take-up by these premises.

These assumptions are further described below. Also provided below is a further breakdown of the Bidder's assumptions for monthly rental revenue, connection and churn revenue and other revenue.

If and to the extent that actual outturn revenues exceed those forecast by the Bidder in its Project Financial Model, the contract (if implemented appropriately) provides that the net increase in revenues will be addressed through the IRR clawback mechanism (section 7.4.5).

7.4.2 Wholesale Product Prices

The Bidder's initial wholesale prices for its Bitstream and VUA products align with the Budget Model assumptions. [REDACTED]

7.4.3 Addressable Premises

Table 7.7 below presents the Bidder's analysis of the addressable premises in the Intervention Area (i.e. the number of premises in the Intervention Area that it assumes may be addressed by its solution), with a comparison to the Budget Model.

Table 7.7: Addressable Premises

Analysis of Premises	Bidder's Analysis of Premises (thousands)	Budget Cost Model Assumption (thousands)
Total Existing Premises in IA		
Of which mixed use / double counted		
Of which vacant		
Already have access to +30Mbps		
Total Existing Addressable Premises		
Total New Premises		
Total Addressable Premises		

7.4.3.1 Adjustments to existing premises

The adjustments to "existing premises" in the addressable premises calculation are as follows:

- **Mixed use premises:** The Bidder isolated mixed use premises by identifying buildings in the Department's Premises Database which contained both a residential address and a commercial address, [REDACTED] were identified as such and were subtracted from the premise database figure as these were considered to be double counted (i.e. it is unlikely that the premise would require two connections).
- **Vacant premises:** The Bidder calculated the vacancy figure [REDACTED] by using the GeoDirectory data and the Department's Premises Database.
- **Premises with fibre broadband of +30 Mbps:** The Bidder conducted a survey which yielded results suggesting that [REDACTED] of respondents already have access to fibre broadband of +30 Mbps and consequently are unlikely to have an interest in taking up the Bidder's product. This resulted in [REDACTED] premises being removed.

The resulting addressable premises figure of [REDACTED] than the Bidder's Detailed Solutions assumption and also lower than the Department's Budget Model.

7.4.3.2 *Adjustments for new premises (premises growth)*

The Bidder has assumed that there will be a premises growth rate of [REDACTED]

This rate of [REDACTED] is primarily driven by the CSO's '2016-2031 Population and Labour Force Projections' report. These projections were made in 2013 and were influenced by the period (2008-2011) of net migration. More recent ESRI66 projections (January 2018) and CSO projections (June 2018) suggest a 0.7% growth rate p.a. and a 1.3% growth rate p.a. respectively.

In addition, household size data, when applied to the Intervention Area, indicates a long term trend of reducing average number of persons per premises which would imply more premises are required to house a static population. As the population grows this reduction in household size may compound the increase in number of premises across the Intervention Area.

Due to these factors it is possible that the Bidder may have underestimated the premises growth rate, thereby underestimating both the expenditure and revenue that it may incur over the 25 year period.

7.4.4 *Take up*

Table 7.8 below presents the Bidder's assumptions regarding the take up of its broadband services in the Intervention Area. The figure presents the assumed addressable premises and assumed take up (subscribers) by category of end user at the end of year 10 (December 2028) and end of year 25 (December 2043).

Table 7.8: Take Up

Take-up	Year 10	Year 25
Residential	[REDACTED]	[REDACTED]
Residential - Holiday Home	[REDACTED]	[REDACTED]
Small Business	[REDACTED]	[REDACTED]
Mixed Use Small – Farms	[REDACTED]	[REDACTED]
Strategic Community Points	[REDACTED]	[REDACTED]

⁶⁸ ESRI: "Prospects for Irish Regions and Counties – Scenarios and Implications" – published January 2018: <https://www.esri.ie/pubs/RS70.pdf>

Take-up	Year 10	Year 25
Total – Addressable Market		
Residential - subscriber base		
Residential Holiday Home - subscriber base		
Small Business - subscriber base		
Mixed Use Small Farms - subscriber base		
Strategic Community Points - subscriber base		
Total - subscriber base		
Residential - take up %		
Residential Holiday Home - take up %		
Small Business - take up %		
Mixed Use Small Farms - take up %		
Strategic Community Points - take up %		
Blended take up %		

Source: Project Financial Model

The take-up profile at year 10 (December 2028) is below that at contract completion (December 2043). This is a factor of the deployment rate assumed by the Bidder, as it forecasts deployment to continue up until Q4 2025, therefore the take-up rate lags behind the deployment as shown below.



Whilst it reaches a higher percentage take-up by the end of the contract period, the Bidder's blended take-up curve is shallower than the blended take-up curve in the Department's Budget Model.



Ultimately the revenue assumptions are a matter for the Bidder to take a view on. Whether or not their assumptions turn out to be more accurate than those assumed by the Department will only be known with time. Under the contract as drafted, (if implemented appropriately) increased revenues will be taken into account by the IRR clawback mechanism.

We would also make the following recommendation.

Action (Post-Contract Award): Demand Stimulation

We recommend that the Department contract implementation and governance team is proactive in its monitoring of NBPCo's demand stimulation activities, receiving monthly reports on progress, activities undertaken and planned marketing activity. The Department might also consider opportunities to support the stimulation of take-up in the intervention area.

7.4.5 Rental Revenue

Table 7.9 below presents a breakdown of the Bidder's rental revenue in years 1 to 10 and years 1 to 25 (full contract period). Table 7.6 presented the overall comparison with the Department's Budget Model.

Table 7.9: Rental Revenue

Rental Revenue	Years 1-10	Years 1-25
Bitstream		
VUA		
Additional Wholesale Products		
Total		

Source: Project Financial Model



7.4.6 Connection and Churn Revenue

Connection and churn revenue is comprised of one off charges for initial connections to the network and for reconnections to the network and for churn (changes from one service provider to another but remaining on the NBPCo network).

As displayed in Table 7.6 above, connection and churn revenue represents [redacted] of total commercial revenue over the 25 year contract term and [redacted] over the first 10 years. A breakdown is provided below.

Table 7.10: Connection & Churn Revenue

Connection & Churn Revenue	Years 1-10	Years 1-25

	Cm	Cm
Initial connection charges	[REDACTED]	[REDACTED]
Reconnections (including churn)	[REDACTED]	[REDACTED]
Total	[REDACTED]	[REDACTED]

Source: Project Financial Model

The Bidder has applied an annual indexation uplift of [REDACTED] to the initial connection and reconnection charges.

7.4.7 Other Revenue

Other Revenue accounts for [REDACTED] of the revenue in the first 10 years and [REDACTED] of the revenue over the 25 year contract period. A breakdown is presented below. Table 7.6 presented the overall comparison with the Department's Budget Model.

Table 7.11: Other Revenue Breakdown

Other Revenue	Years 1-10		Years 1-25	
	Cm	Cm	Cm	Cm
Symmetric	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Mobile Backhaul	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Interconnect	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Co-location Products	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: Project Financial Model *rounding

7.5 Governance of Network Operation

7.5.1 Consistent with Strategy

Governance of the network operation phase is proposed to be consistent with the key requirements of the Intervention Strategy Governance Report (December 2015).

In summary terms, it is our (non-legal) understanding that the Contract (if implemented appropriately) provides for:

- The Department to monitor, review and scrutinise the operational performance of NBPco and its subcontractors against the operational KPIs in the contract;

- The Department to monitor, review and scrutinise the service performance achieved by the network against the broadband service KPIs in the contract (e.g. in terms of availability, download speeds and upload speeds);
- NBPco to incur performance credits (i.e. repayment of subsidy) if its operational performance or service performance falls below the target performance levels set out in the contract in any quarter;
- Clawback of subsidy if the financial performance of NBPco (measured in IRR terms) following deployment is better than forecast in the Project Financial Model;
- Clawback of subsidy if the terminal value of NBPco at the end of the contract period is better than forecast in the Project Financial Model; and
- As explained in section 5.4, a right (should it so desire), or obligation in certain specific scenarios, for the Department to take-over and operate the network if NBPco is:
 - Unable to continue to operate the network in accordance with the contract (e.g. following the viability checkpoint at year 10 or following a termination event); or
 - Unwilling to continue to operate the network in accordance with the contract (e.g. at the end of the Contract period).

It will be important for the Department to have an appropriately skilled and resourced team to implement this governance.

7.5.2 Governance of Operational Performance

There are strong financial and contractual incentives for NBPco to operate the network to meet the KPI target performance levels in the contract. These are described below.

7.5.2.1 Loss of revenues

NBPco has a natural commercial incentive to meet the target performance levels in the contract, as substandard service quality will impact customer take-up and revenues.

Sensitivity analysis provided by the Bidder in its Final Tender submission highlights the impact that a material decline in take-up (■) could have on NBPco shareholders' rate of return as a result of poor service quality. This is shown in Table 7.12 below. The table also shows the positive impact on shareholder returns of increased take up.

Table 7.12: Impact of Lower Take Up on Equity IRR

Sensitivity	Equity IRR (10 years)	Equity IRR (25 years)
Base case		
Take up 10% lower than forecast		
Take up 10% higher than forecast		

Source: Final Tender Project Financial Model

Both scenarios highlight the financial incentive to NBPco shareholders of operating the network in an effective manner to stimulate take up and generate financial returns.

7.5.2.2 *Performance credits*

In addition to a potential loss in revenues, under the terms of the contract (if implemented appropriately), NBPco will also incur performance credits (i.e. be required to repay subsidy) in the event that any KPI target performance level is not achieved in any quarter following completion of deployment in a Deployment Area.

The contract (if implemented appropriately) provides that the level of performance credit to be applied is dependent on the importance of the KPI (stated in terms of performance points) and the severity of the performance failure (with higher severity failures resulting in a greater number of performance points being accrued). This performance regime is set out in Schedule 6.7 (Performance Levels) of the contract.

Performance credits are subject to a maximum under the contract, in respect of any rolling period of four consecutive quarters, [REDACTED]. Within this performance credit cap, the total performance credits which may be applied as a direct result of a failure by Openeir to comply with the terms of its infrastructure access agreement is limited to separate caps, which reflect the limits of liability in the Openeir infrastructure access agreement.

Performance credits which are accrued in respect of the following KPIs:

- KPI 12: Wholesale Product Benchmarking Rules & Wholesale Pricing Rules & Future Proofing;
- KPI 13: Retail Pricing Rules; and
- KPI 14: Discrimination Events,

are not subject to the performance credit cap, and accordingly in the event of such KPI failures performance credits under the contract may exceed [REDACTED] in any rolling period of four consecutive quarters.

Performance credits therefore provide a financial incentive for NBPco and its subcontractors (to whom NBPco will flow down these contract terms) to perform in accordance with the performance levels set out in the NBP contract.

7.5.2.3 [REDACTED]

7.5.2.4

A series of eight horizontal black bars of varying lengths, decreasing from top to bottom. The first bar is the longest, followed by a shorter one, then a long one, then a short one, then a long one, then a short one, then a long one, and finally the shortest bar at the bottom. The bars are set against a white background.

7.5.3 Governance of Wholesale Prices

A key objective of the state-led intervention is to offer high speed broadband services for premises in the Intervention Area that are of comparable affordability (i.e. price) to equivalent services outside of the Intervention Area and, in doing so, to support retail competition in the Intervention Area.

Schedule 5.2 of the contract therefore sets out the contract terms that govern the:

- Setting of NBPco's wholesale prices; and
- Benchmarking of NBPco's wholesale prices.

The "Wholesale Pricing Rules" and "Retail Pricing Rules" set out in schedule 5.2 are key to achieving the policy objective outlined above.

As noted in section 7.5.2.2 above, under the contract as drafted, NBPco will incur performance credits in respect of any failure to comply with the terms of this schedule and such performance credits will not be subject to the performance credit cap.

7.5.4 Governance of Operating Costs

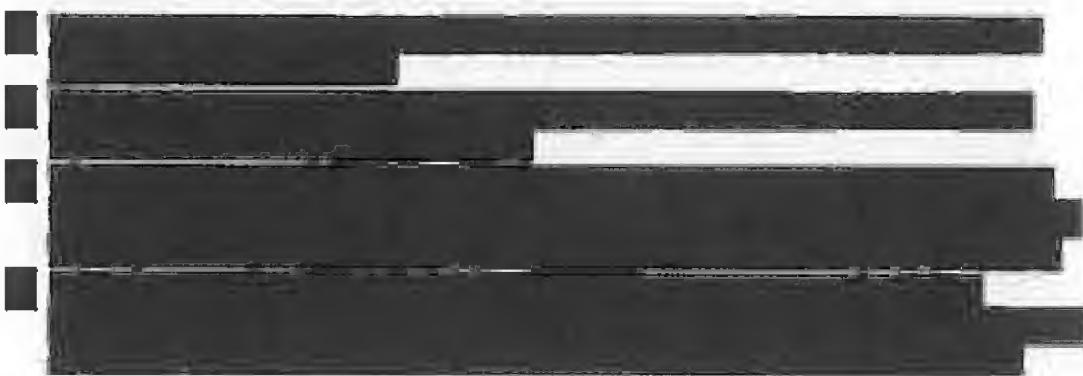
The contract provides two main mechanisms for the governance of operating costs:

- Post build Contract Assumptions; and
- Benchmarking and market testing of operations.

These mechanisms are described below.

7.5.4.1 Post Build Contract Assumptions

Under the terms of the contract (if implemented appropriately) NBPco will bear almost all of the operating cost risk for the NBP network. The Department has however included within the contract⁶⁷ post build Contract Assumptions, which relate to operating cost risks and uncertainties that are not in NBPco's control. Government will therefore carry risk associated with positive or negative variances in these assumptions:



These Contract Assumptions are set out in detail in Annex 5 of Schedule 6.2 (Change Control) of the NBP contract.

7.5.4.2 Benchmarking and market testing



⁶⁷ Section 2.10 of the Additional ISFT Volume 3 Contract Terms 13-09-18

⁶⁸ "Good Value" may be defined in terms of: (a) that, having taken into account the Key Subcontract terms including service levels and service credits, the charges attributable to that Subcontract are at least as good (taking into account the subcontract terms) as the average price of the comparison group; and (b)

[REDACTED]

This is in addition to the Departments other existing rights under the contract as drafted to conduct an audit of NBPco and/or to require an independent assurance review of NBPco's operations.

7.5.5 IRR Clawback

7.5.5.1 Application of IRR clawback

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

7.5.5.2 Potential for IRR clawback

[REDACTED]

that the service levels delivered under that Key Subcontract are, having taken into account the charges, equal to or better than the median service levels for the comparison group using equivalent services data.

Table 7.13: Impact of Higher Take Up or Lower Operating Costs on Equity IRR

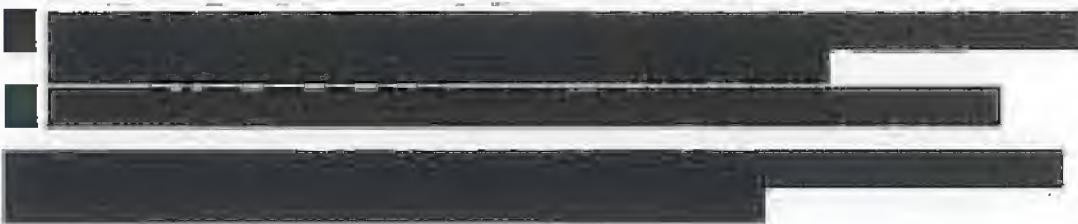
Sensitivity	Equity IRR (10 years)	Equity IRR (25 years)
Base case		
Take up 10% higher than forecast		
Operating costs 10% lower than forecast		
Take up 10% higher, Capex and Opex 10% lower		
Revenue 25% higher, Capex and Opex 20% lower		

Source: Final Tender Project Financial Model

7.5.5.3



7.5.6 Terminal Value Clawback



7.6 Conclusions on Network Operation

This section of the report has presented a detailed review of:

- the Bidder's solution for network operation;
- the Bidder's forecast costs of network operation;
- the current allocation of risk for network operation; and
- the proposed governance arrangements for network operation.

This review has indicated that the Bidder's technical and contractual solution for network operation is appropriate for the project, with flow down of relevant NBP contract terms, including operating cost and performance risk, to subcontractors for the services they are contracted to provide. It also indicates that, in comparison with the Department's Budget Model, the Bidder has incorporated higher operating cost and lower revenue assumptions into their pricing, which results in a higher initial subsidy requirement from Government.

However the contract, if implemented appropriately, contains various incentives for NBPco to operate the network in accordance with the contract and, in the event that NBPco outperforms its financial projections, the contract includes appropriate mechanisms to clawback Government subsidy. We have also set out a number of recommendations to enhance the Government's position in these areas.

Section 7.1 set out our views on "what Government needs" in respect of Network Operation. As some of the cost and revenue assumptions are higher and lower respectively than expected, we have made recommendations on areas where the Government could seek to refine its required share of upside in light of the significant subsidy being invested into the project. With this and our other recommendations in mind, the findings of this section of the Single Bidder Solution Assessment report indicate that:

- The Bidder has the technical capacity to operate the network;
- Indications are that operating risk is likely to be appropriately allocated within the NBP contractual structure proposed;
- The Bidder's Project Cost Model operating cost assumptions are appropriate for the Bidder's technical solution and include an appropriate level of contingency to cover the operational risk that NBPco will bear;

- NBPco and its key subcontractors have the financial capacity to maintain and operate the network, taking into account the risk of cost overruns, noting our recommendation for this assessment to be updated prior to contract award;
- The NBP contractual framework (if implemented as intended) incorporates appropriate safeguards (covering both NBPco and its key subcontractors) to address State Aid Guidelines, the NBP Intervention Strategy and the Public Spending Code, including:
 - Appropriate levels and use of public subsidy;
 - Technical and financial transparency in respect of network operation;
 - Governance of wholesale access and prices;
 - Appropriate clawback of public subsidy if the financial performance of NBPco following deployment is better than forecast in the Project Financial Model; and
 - Appropriate governance arrangements to ensure that potential savings in operational expenditure are identified and realised by NBPco (to facilitate clawback);
- There are appropriate contractual and financial incentives for NBPco to maintain the network and achieve the required service levels throughout the contract period; and
- The Department has the option (should it so desire), or obligation in certain specific scenarios, to take-over and operate the network if NBPco is unable or unwilling to operate the network in accordance with the contract.

8 Network Governance

8.1 What Government Needs

As described earlier, the Bidders solution requires significant State investment over the term of the NBP contract.

In respect of this “Network Governance”, Government therefore needs to consider whether:

- NBPco is adhering to best practice in terms of Corporate Governance appropriate for level of public subsidy invested in the Project; and
- Government has appropriate levels of oversight over NBPco given the level of public subsidy in the project.

8.2 Solution Summary

8.2.1 Bidder Solution

The key corporate governance requirements included in the NBP contract are set out in Schedule 2.7 (NBPco Requirements). It is a precondition to the award of the contract that the Bidder has evidenced to the satisfaction of the Department that the corporate governance of NBPco is in accordance with Schedule 2.7.

Schedule 2.7 contains provisions, *inter alia*, in relation to:

- Requirements in relation to the NBPco legal entity (e.g. designated activity company, tax resident in Ireland, compliance with Non-Discrimination Provisions of the Contract);
- Organisation structure for NBPco;
- Governance protocol;
- Top Tier Key Personnel (i.e. CEO, CFO, CTO/COO, compliance/legal officer, programme director, head of network operations) including provisions regarding reporting lines, duties and remuneration policies;
- Board of Directors of NBPco (5-9 members, chairman, Minister's Appointee), independent non-executive director(s), removal of directors;
- Terms of reference for NBPco board;
- Dispute resolution with members of NBPco wider economic group;
- Non-discrimination provisions;
- Confidentiality provisions;
- Financial Audit requirements;
- NBPco branding, marketing and website;

- NBPco stand-alone activities;
- Shared services; and
- Requirements for constitution of NBPco (equal treatment of service providers, NBPco board reserved matters, Governance Protocol and Ministers Special Share requirements which are detailed in Appendix 1 and 2 to Schedule 2.7).

As part of its Final Tender (Contract Question 3), the Bidder submitted the following documents:

- Details of the NBPco legal entity;
- A draft constitution of NBPco;
- A draft shareholders agreement for NBPco;
- A draft organisation structure for NBPco;
- Details of Top Tier Key Personnel (experience profile, key responsibilities, duration of role); and
- A draft Governance Protocol / Code of Practice (including Terms of Reference).

The information/documents provided were separately assessed as part of the final tender evaluation.

As stated in section 5.2, the Bidder's solution places a significant level of responsibility for the delivery of the network with Buildco, a key subcontractor of NBPco. The Bidder has stated that circa [REDACTED] of deployment obligations will be subcontracted to Buildco, a special purpose vehicle [REDACTED].

[REDACTED]. This means that Buildco will, on a day to day basis, manage the investment of public subsidy in the deployment of the broadband network and it will be through Buildco that the main deployment clawback will flow (see section 5.4).

Accordingly, we believe the Department should require similar levels of corporate governance, oversight and transparency in respect of Buildco to those it requires of NBPco. This should include a Minister appointee on the board of Buildco.

Action (Pre-Contract Award): Governance and oversight of Buildco

Department should require similar levels of corporate governance and oversight in respect of Buildco to those it requires of NBPco. This should include a Minister appointee on the board of Buildco.

8.2.2 Department Oversight

The NBP contract (if implemented appropriately) imposes numerous obligations on NBPco to report to, consult with and seek approval from the Department during deployment and operations. The contract also provides the Department with a range of contractual mechanisms and protections to robustly oversee the delivery of the Project (from State's perspective).

It will therefore be critical that the Department is appropriately organised and resourced to fulfil its contract management role as envisaged under the contract and as required by the Public Spending Code.

The Department is currently considering the establishment of a special purpose unit / entity to implement the contract after award. This special purpose unit, or an appropriate interim solution, will need to be put in place prior to contract award.

Action (Pre-Contract Award): Department oversight

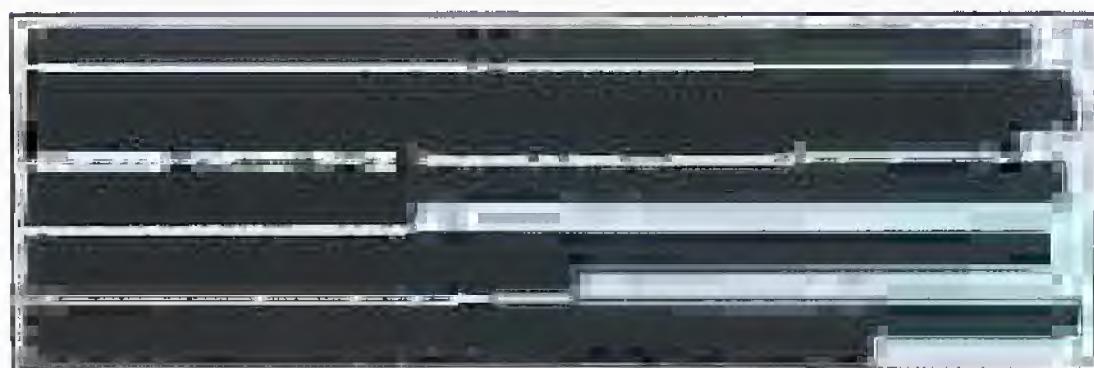
DCCAЕ to finalise its proposals in relation to the establishment of a special purpose unit / entity to oversee the contract. This special purpose unit, or an appropriate interim solution, will need to be put in place prior to contract award.

8.3 Code of Governance for State Bodies

While NBPco is not a State Body subject to the Code of Best Practice for the Governance of State Bodies, August 2016 (and supplemental guidance) ("the Code"), the relevant governance provisions under the contract as drafted have been reviewed to identify if there are any key areas that inconsistent with the Code.

The comparison highlights where there are provisions in the contract which are analogous to those contained in the Code, or where the provisions of the Code are not applicable/relevant to NBP Co. For example the contract already contains detailed provisions in relation to role of the Board, the Chairman, Board Members, Board effectiveness, conflicts of interest, confidentiality, non-discrimination, reporting and quality. The Code provisions in relation to, for example, ethics in public office, disclosure of interests and relations with Oireachtas/Ministers/Parent Departments (including procedures for approval of substantial transactions) are not directly applicable to NBPco however the contract contains a number of provisions in relation to liaison with and reporting to the Department and operations of NBP Co.

In the finalising the contract the Department should consider the potential to further enhance the governance by the inclusion of some additional corporate governance protections (primary examples in box below).



8.4 Conclusions on Network Governance

Section 8.1 set out our views on "what Government needs" in respect of Network Governance. Noting the additional protections that we are recommending above, the findings of this section of the Single Bidder Solution Assessment report indicate that

- Subject to satisfactory review of the final drafts of the Constitution, Shareholders Agreement and Governance Protocol prior to contract award, indications are that the NBPco proposals set out in the Final Tender are in line with best practice in terms of Corporate Governance appropriate for level of public subsidy invested in the Project. these provisions are broadly in line with / or comparable (where appropriate) to the Code, noting that NBPco is not a State Body. However similar levels of corporate governance, oversight and transparency should be flowed down as appropriate to Buildco; and
- Provided the contractual provisions included in the final NBP contract and the governance arrangements described in this report are implemented appropriate, there are mechanisms in the contract to provide Government with appropriate levels of oversight over NBPco given the level of public subsidy in the project.

9 Assessment of Solution Quality

9.1 What Government Needs

The Department has set out in the NBP contract its service requirements in respect of the state-led intervention. The ISFT evaluation methodology set out how the Bidder was to present its response to these service requirements (the Bidder's "Solution") and how the quality of the Bidder's Solution will be evaluated at Final Tender stage.

The evaluation of the Bidder's Solution follows a three stage process as set out below:

- Stage 1: Completeness, compliance and robustness check;
- Stage 2: Evaluation against the award criteria; and
- Stage 3: Ranking and identification of a provisional Preferred Bidder.

The primary and secondary award criteria and weightings are summarised below. Full details are provided in the evaluation methodology.

Table 9.1: Primary and Secondary Award Criteria and Weightings

Primary Criteria	Primary Weightings	Secondary Criteria	Secondary Weightings
Technical Solutions	65%	Technical solution specification	20%
		Reference offer	35%
		Speed of deployment and environmental	30%
		Operational performance	15%
Commercial Solutions	35%	Communications, demand stimulation and brand plan	10%
		Subsidy Payments	90%

Source: ISFT Volume 2 (Evaluation Methodology)

In addition to passing the initial completeness, compliance and robustness checks (Stage 1), the Bidder's Solution must achieve minimum score thresholds in respect of the technical solutions award criteria and the commercial solutions award criteria at Stage 2. If the Bidder's Solution does not achieve those minimum score thresholds or fails the completeness, compliance and/or robustness check at Final Tender stage, the Bidder's Solution will be rejected and will not be evaluated further.

On the basis of the ISFT evaluation methodology summarised above, the Government needs to consider whether, in respect of the Bidder's Solution:

- The Bidder's Solution is complete;

- The Bidder's Solution is compliant with the NBP contract, as defined by the evaluation methodology;
- The Bidder's Solution is robust, as defined by the evaluation methodology;
- The Bidder's Solution is of a sufficient quality, as determined by scores awarded and the achievement of the minimum score thresholds; and
- Any areas in which the Solution does not fully satisfy the Department's requirements have been identified by the evaluation teams so that they can be addressed prior to contract award.

9.2 Evaluation of Bidder's Solution (Final Tender)

The evaluation of the Final Tender as submitted was undertaken by a series of Evaluation teams. These teams were comprised of a mix of Department personnel, external third parties and the Department's advisers. Each team had the option of seeking supporting advice and assessment from advisers. This included reports from KPMG and Analysys Mason⁶⁹. The outcome of the evaluation was then reviewed by an Evaluation Review Panel and subject to final review by the Procurement Board. The detail of that evaluation is not the subject of this report. However the outcome of the final tender evaluation of the Bidder's Solution is set out below.

9.2.1 Stage 1: Completeness, Compliance and Robustness Checks

The Stage 1 evaluation found the Bidder's Solution to be complete, compliant and robust.

The compliance check examined the following areas of the Bidder's solution. Further details are provided in the evaluation methodology and Final ISFT Evaluation Report.

Table 9.2: Compliance Check

Commercial Compliance	Contract Compliance
Project Financial Model	Ownership & Contractual Structure
Project Cost Model	Key Subcontracts
Wholesale Prices, Wholesale Pricing Rules and Wholesale Product Benchmarking Rules	Infrastructure Access Agreements
Funding Plan	NBPco Requirements
NBPco Branding Requirements	Contract Declaration
Insurance	Other Declarations

The robustness check examined the following areas of the Bidder's solution. Further details are provided in the evaluation methodology and Final ISFT Evaluation Report.

Table 9.3: Robustness Check

Robustness Check
Project Cost Model
Financial Solution (comprising Project Financial Model, Wholesale Pricing, Funding Plan and Contractual Structure)

9.2.2 Stage 2: Evaluation against the Award Criteria

9.2.2.1 Scoring definitions

The evaluation methodology provides a detailed scoring definition for each of the technical and commercial award criteria. In general, with the exception of those secondary criteria that are scored on the basis of a calculated score, the scores awarded by evaluation teams are based on the following high level definitions.

Table 9.4: High Level Scoring Definitions

Score	Classification
0	No response
1	Unsatisfactory response
2	Partially acceptable response
3	Satisfactory and acceptable response
4	Fully satisfactory/very good response
5	Outstanding response

Accordingly, the Department will want the Bidder's Solution to achieve a score of at least 3 in respect of each of the award criteria. Nevertheless, the Department will not necessarily reject the Bidder's Solution if it scores less than 3 in respect of one or more award criteria, provided that it passes the minimum score thresholds.

In addition, the Department will not necessarily want the Solution to score more than 3 for many award criteria, as this would mean that the Bidder's Solution exceeds the Department's requirements, which may not represent the best outcome (in terms of quality versus cost) for Government.



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9.2.2.2 *Technical evaluation*

The scores awarded by the technical evaluation teams in respect of the technical sub-criteria are set out in Table 9.5 below. The findings of the evaluation teams in respect of each of the technical sub-criteria are set out in the Final ISFT Evaluation Report.

Table 9.5: Scores Awarded under the Technical Sub-Criteria

Criteria	Technical Sub-Criterion	Score Awarded
Technical Solution Specification	Wholesale Product Roadmap and Technology Roadmap	█
	Universal Wholesale Gateway	█
	OSS/BSS system	█
	Electronic Network Maps, Public Portal and Secure Portals	█
	Network evolution and future proofing	█
Reference Offer	Reference Offer(s) for Minimum Bitstream Wholesale Product Suite	█
	Reference Offer(s) for Remaining Minimum Required Wholesale Products	█
	Reference Offer(s) for Additional Required Wholesale Products	█
	Reference Offer(s) for Other Permitted Wholesale Products	█
Speed of Deployment and Environmental	Wholesale Product & Coverage Template – Premises	█
	Wholesale Product & Coverage Template – Strategic Community Points	█
	Wholesale Product & Coverage Template – Post Deployment	█
	Coverage verification through testing and audit	█
Operational Performance	Operational Performance Management (Business Processes)	█
	Network Performance	█
	Service Provider Testing and Support Facilities	█
	Industry Engagement	█

The scores awarded in respect of the technical sub-criteria confirm that the Bidder's Solution scores at least 3 (satisfactory and acceptable) in respect of all but one of the 16 sub-criteria. The criterion on which the Solution scored less than 3 is a criterion with a calculated score, whereby the Solution scored █ out of 5 on each of two parts of the calculation and █ on a third part, but when the three parts are multiplied together (in accordance with the methodology) the product is █ out of 25, which equates to a score of █ out of 5.

Minimum Percentage Score (Technical Criteria)

The evaluation methodology states that, at Final Tender stage, the Bidder's Solution must not achieve a percentage score of less than 40% (i.e. 40 out of 100) in respect of any of the four Technical Criteria.

As shown in the right hand column of the table below, the Bidder's Solution achieves the minimum percentage score of 40% in respect of every Technical Criterion and therefore passes the minimum score threshold for the technical criteria.

Table 9.6: Percentage Score for the Technical Criteria

Technical Criteria	Percentage Score
Technical Solution Specification	█
Reference Offer	█
Speed of Deployment and Environmental	█
Operational Performance	█

9.2.2.3 Commercial Evaluation

The scores awarded by the commercial evaluation teams in respect of the commercial sub-criteria are set out in Table 9.6 below. The findings of the evaluation teams in respect of each of the sub-criteria are set out in the Final ISFT Evaluation Report.

In respect of the "Subsidy Payments" criterion, the Bidder's Solution has been awarded a score of 5 as, being the only Solution submitted at Final Tender stage, it is the Solution with the lowest Subsidy Payment NPV.

Table 9.6: Scores Awarded under the Commercial Sub-Criteria

Criteria	Commercial Sub-Criterion	Score Awarded
Communications, Demand Stimulation and Brand Plan	CDB Strategic Plan	■
	Demand Stimulation Project Plan	■
	NBPco Brand Development Plan	■
	Communications and Engagement Plan	■
Subsidy Payments	n/a	5

The scores awarded in respect of the commercial sub-criteria confirm that the Bidder's Solution scores at least 3 (satisfactory and acceptable) in respect of all but one of the 5 sub-criteria. A score of ■ was awarded against the response to the sub-criterion "Communications and Engagement Plan", because the response did not provide sufficient, additional information to supplement the detailed case study examples of communication and engagement plans provided by the Bidder for two representative Deployment Areas and did not clearly explain how NBPco will communicate to specific stakeholder groups over the contract period. This is a relatively minor omission which has been noted by the evaluation team and will be addressed prior to contract award.

Minimum Percentage Score (Commercial Criteria)

The evaluation methodology states that, at Final Tender stage, the Bidder's Solution must not receive:

- a percentage score of less than 40% (i.e. 40 out of 100) in respect of the Commercial Sub-Criterion "Demand Stimulation Project Plan"; or
- a percentage score of less than 40% (i.e. 40 out of 100) in respect of the Commercial Criterion "Communications, Demand Stimulation and Brand Plan".

As shown in the table above, the Bidder's score of ■ (out of 5 i.e. ■) for "Demand Stimulation Project Plan" passes the first minimum score threshold above.

The table below shows that the Bidder achieves a percentage score of ■ in respect of commercial criterion "Communications, Demand Stimulation and Brand Plan" and therefore also passes the second minimum score threshold.

Table 9.7: Weighted Percentage Score for the Commercial Criteria

Commercial Criteria	Percentage Score
Communications, Demand Stimulation and Brand Plan	■
Subsidy Payments	■

9.2.3 Conclusion on Solution Quality

Section 9.1 set out our views on "what Government needs" in respect of the assessment of Solution Quality. In this respect the separate tender evaluation process findings, as summarised in this section of the Single Bidder Solution Assessment Report, indicate that:

- The Bidder's Solution is complete;
- The Bidder's Solution is compliant with the NBP contract, as defined by the evaluation methodology;
- The Bidder's Solution is robust, as defined by the evaluation methodology; and
- The Bidder's Solution is of a sufficient quality, as determined by scores awarded and the achievement of the minimum score thresholds.

In addition, whilst conducting the final tender evaluation, the evaluation teams have identified any areas where the Bidder's Solution still needs further refinement so that they can be addressed prior to contract award.

10 Conclusions

10.1 Overall Conclusion

The NBP Project is a unique project in Ireland, in terms of ambition, scale and complexity. It is a project for the deployment of high speed broadband services to circa 536,000 of the hardest to reach premises in Ireland within a seven year period. The intention of Government is that it will deliver Government's commitment that 100% of premises (i.e. every citizen and business), regardless of location, will have access to high speed broadband at prices that are affordable and in line with the rest of the country.

In accordance with the Government's commitment, the Government's intention is that the project is to be delivered in a single intervention (one deployment programme) i.e. no one should be left unserved.

The scale of the commitment required from Government and a private sector partner is significant in the commercial broadband market in Ireland. While the objective of 100% coverage has been set in other countries, progress has been slow to deliver to this objective internationally.

Delivering on the above requirements will involve any entity taking on a significant level of risk. To deliver this commitment and to mitigate and manage the risk of failure, it is important that the Project's financial projections and contract terms take account of the high level of risk associated with the deployment of this broadband network, including deployment cost and timescale risks, connection cost risks, reliance on third party infrastructure, technology risk, customer take-up risk and price inflation risk.

The Government's assessment of the financial, social and economic importance of this Project is such that it wants to mitigate the risk of the Project failing once a contract has been signed. It will be important for Government that any entity taking on this project can deliver the Government's commitment to high speed broadband for every citizen and business in Ireland, and to secure the provision of those services for a period of at least 25 years.

Accordingly, having regard to the Government's primary objective, the key objective of the NBP procurement process is not to secure simply the lowest price, rather it is to secure appropriate quality and certainty of delivery.

It is important to note that all of our comments on the contract are based on the important assumption that the contract as drafted achieves its intended legal effect. Whether or not it does is a matter for the Department's legal advisers.

In light of that fact that two Bidders withdrew from the procurement process before final tender, it has obviously not been possible to compare the final tender received to any competing bid. This has meant that additional detailed analysis is required to inform the Department's consideration of whether the final tender submitted by the remaining

Bidder is an acceptable outcome for Government, by reference to the Public Spending Code.

This Single Bidder Solution Assessment Report has been prepared by KPMG to inform the Department's assessment of whether it considers the final tender (i.e. solution) submitted by the Bidder to be an acceptable outcome for Government, by reference to the Public Spending Code.

This assessment of the Bidder's solution under the Public Spending Code has found that:

- According to Analysys Mason, the technical solution proposed by the Bidder is projected to be capable of delivering the benefits sought under this project however this comes at a higher cost than expected. The Cost Benefit Analysis sensitivity completed by PwC using the Bidders assumptions still estimates a positive Benefit to Cost Ratio.
- The underlying cost for deployment (build) is broadly in line in aggregate terms with the Department's expectations, however there are notable financial differences in margins, contingencies, operational model and in particular revenue, largely related to differing views on underlying assumptions. In this context it should be noted that:
 - It would be challenging for any party to achieve a high degree of certainty on the underlying cost base and pricing of risk on a project of this scale. Differences in key assumptions by different parties would not be unexpected;
 - In any project where the State seeks to transfer revenue or demand risk, the private sector is likely to set their expectations of demand lower in order to manage their risk exposure. The lack of competitive tension in the project may have been a contributory factor in this regard. However experience on other broadband projects in Ireland would also indicate challenges with the rate of take up of a new service such as this. The Bidder's approach to setting demand assumptions has to be considered in this context. It is possible that the Bidder's assumptions could turn out to be more accurate than those of the Department in the long term but this remains an unknown; and
 - If the Department's underlying assumptions ultimately turn out to be more accurate than the Bidder's, the contract regime as drafted provides for the Department to share in any savings in costs or additional revenues generated. Each of the areas of key difference noted above are captured by a clawback regime that on average shares 50-100% of savings back with the Department.
- In the event that the Department's underlying assumptions for the project prove to be more accurate than the Bidder's, the clawback mechanism in the contract will reduce the headline differential between the parties. The extent of the reduction is unknown but is unlikely to remove the differential completely.

As stated previously, it is important to recognise that for a gap funding project of this nature, whilst interim comparisons of actual and forecast costs and benefits can be made as the network is deployed and operated, value for money can only be assessed with certainty at the end of the contract period, when the final outturn costs and benefits, net of clawback, are known.

The purpose of the gap funding contract underpinning this project is therefore to provide Government with a series of contractual mechanisms and governance arrangements which if implemented appropriately, are intended to:

- drive efficient and cost effective deployment and operation of the broadband network by the private sector partner; and
- reduce or claw back the subsidy provided to its private sector partner in the event that the cost of deployment is lower or the financial performance of the network is better than forecast in the final tender (i.e. in the event that the risks that the Bidder has priced for do not materialise or materialise to a lesser degree).



If implemented and monitored appropriately, the contract should provide Government with mechanisms to exercise oversight over the deployment and long term operation of the network. The contract should also provide a mechanism for Government to take ownership of the network if at any time NBPco is unable or unwilling to deliver the services in accordance with the contract over the next 25 years. However a contract is only effective if properly implemented by both parties.

The key question for Government now is whether the Government wishes to contract with the Bidder at the final tender price and then proceed to effectively implement the protections and provisions in the contract with the aim of securing reductions in / clawback of subsidy over the contract's life.

The contract will however only be effective if an appropriately skilled and resourced multidisciplinary Government team is put in place to appropriately implement the protections and provisions drafted into the contract.

This is now a critical factor for the successful delivery of the NBP intervention.

10.2 Public Spending Code

As referenced in section 3.1 of this report, the Public Spending Code requires a number of questions to be considered at the tender stage, our conclusions on which we have set out in Table 10.1 below.

Table 10.1: Public Spending Code Requirements for Final Tender Stage

Question	Conclusion
<p>Do the costs and outputs of Final Tender match the costs and benefits that led to the Approval in Principle (i.e. the May 2018 Budget Model)?</p> <p>Whilst both models deliver the same outputs (in terms of a high speed future proofed broadband network that passes 100% of premises in the Intervention Area), Analysys Mason⁷⁰ has highlighted that the Bidder's Project Cost Model and Department's Budget Cost Model are based on different network designs and are therefore not entirely comparable on a like for like basis (section 5.3 and 7.3). For example, the Bidder has assumed a higher specification technology than the Department and [REDACTED] more connections. The Bidder's model is also based on a 7 year deployment period.</p> <p>The Bidder's capital cost assumptions are higher with [REDACTED] margin / contingency added (reflecting the Bidders assessment of the scale and risk profile of the project). Analysys Mason has identified that, whilst the Bidder's forecast capex to pass (prior to margin / contingency) is within [REDACTED] of the Department's Budget Cost Model, the Bidder's capex to connect is [REDACTED] higher than the Department's estimate (section 5.3.3). After allowing for margins / contingency, the Bidder's total capital cost forecast is [REDACTED] higher than the Department's estimate.</p> <p>Analysys Mason has also identified that the Bidder's total operating costs over 25 years (including margins / contingency) are within [REDACTED] of the Department's estimate. However there are some material differences at a line item level within these costs and, if pole and duct rental costs are excluded from the comparison (as they are covered by a Contract Assumption), the Bidder's operating costs are [REDACTED] more expensive than the Budget Model (section 7.3).</p> <p>The Bidder's total revenue over 25 years is [REDACTED] lower than the Department's estimate, which is due to the Bidder's assuming a lower addressable base of customers at the start of the project, a take-up (demand) curve that is substantially shallower than the Department's estimate, taking much longer to reach its peak take-up rate of [REDACTED].</p> <p>Overall, in terms of forecast cost to Government, the Bidder's core subsidy requirement of €2.14 billion over 25 years is [REDACTED] than the Department's May 2018 Budget Model (the "Approval in Principle"). According to the Bidder this pricing approach reflects the scale and risk profile of the Project. It reflects their view</p>	

⁷⁰ Technical Solution Assessment Methodology Report, November 2018, Analysys Mason

Question	Conclusion
	<p>on key assumptions which differs from that of the Department and its advisers at this stage. However it is not possible to say with certainty which set of assumptions is correct and only the passage of time will allow that assessment to be made. In respect of a gap funding contract of this nature, the ultimate outturn cost can only be assessed with certainty at the end of the contract period, when the final outturn costs and benefits, net of actual clawback, are known.</p> <p>In terms of outputs / benefits, the Bidder's Solution has predominantly met or exceeded the Departments requirements in the Final Tender evaluation (section 9), committing to deliver the high speed broadband network within a 7 year deployment period and committing to deliver broadband speeds that are substantially in excess of the 30 Mbps minimum requirement set out in the contract. Analysys Mason has confirmed that the active technology proposed by the Bidder⁷¹ offers four times the download bandwidth and eight times the upload bandwidth of the technology assumed by the Department's Budget Cost Model. Analysys Mason also concludes that, considering the requirements of the NBP contract, the future demand, other operators' strategies, and the relatively low-cost premium linked with the introduction of the higher capacity technology at the outset of the contract, the technology proposed by the Bidder can be considered as a value for money technology for the NBP.</p> <p>Whilst the Bidder has assumed a take-up growth rate that is slower than the Department's estimate, the Bidder's peak take-up of [REDACTED] is higher than the Department's assumption of [REDACTED]. The Bidder's approach in assuming slower take-up growth rate assumption is actually consistent with the lessons learned on the 2008 National Broadband Scheme (section 3.4), where both the Bidder and the Department over-estimated take-up.</p> <p>The end user take-up / benefits that are actually delivered by the Project will in reality be dependent on the quality of the private sector partner's delivery during deployment and operations, rather than on the assumptions made by the Bidder and the Department at final tender stage.</p> <p>In conclusion, the costs of the final tender as set out today are in excess of those on which approval was granted however the benefits are comparable. The final outturn cost, net of clawback, will not actually be known until the end of the contract.</p>

⁷¹ The Bidder has proposed a 150 Mbps product as its main product. This is well in excess of the Department's minimum requirement of 30 Mbps (download speed).

Question	Conclusion
<p>If the Final Tender exceeds the “approved budget”, can reductions in costs / subsidy be achieved without lowering the quality of the solution below acceptable levels, in order to bring the project within the approved limit?</p>	<p>As stated above, the Bidder's core subsidy requirement of €2.14 billion over 25 years is [REDACTED] than the Department's May 2018 Budget Model (the “Approval in Principle”). The gap funding contract is intended to provide Government with contractual mechanisms and governance arrangements, if implemented appropriately, to:</p> <ul style="list-style-type: none"> — Provide appropriate oversight on the deployment and operation of the broadband network by the private sector partner, and — enable Government to reduce or claw back the subsidy provided in the event that the cost of deployment is lower or the financial performance of the network is better than forecast in the final tender. <p>We have identified a number of areas in this report where Government could seek further refinement of the breakdown of the Bidder's final tender pricing [REDACTED]. Given the experience in dialogue over the past 6 months with this Bidder, we do not believe substantial changes, if any, to subsidy levels can be achieved at this point. [REDACTED]</p>
<p>If the Final Tender is materially above the approved limit:</p> <ul style="list-style-type: none"> — Is a revised Cost Benefit Analysis required?; and/or — Is a further Project Re-appraisal required (for approval of a raised financial limit)? 	<p>The Cost Benefit Analysis was revisited by PwC when the Project was re-appraised in May 2018. The Department has subsequently revisited the Cost Benefit Analysis again with PwC in October 2018 to take account of more recent information relating to costs and timescales (e.g. the 7 year deployment period). This updated cost benefit analysis by PwC estimates, based on its central scenario, that the Project should deliver a positive real NPV of over €1.7bn over a 25 year period, with a Benefit to Cost ratio of 1.42. A sensitivity was also run by PwC based on the Bidders final tender solution which estimates a positive real NPV of over €1.14bn over a 25 year period, with a Benefit to Cost ratio of 1.24.</p> <p>The Department has given separate consideration to alternative solutions for delivery of Government objectives for the roll out of high speed broadband.</p>
<p>In terms of the Department's management of the Project during the contract term, is there:</p>	<p>As described above and in sections 4 to 6 of this report, the contract if implemented appropriately, provides Government with contractual mechanisms, governance arrangements and protections for:</p> <ul style="list-style-type: none"> — monitoring and managing delivery of the network and services over the 25 year term;

Question	Conclusion
<ul style="list-style-type: none"> — Assigned responsibility for delivery; — Appropriate structures for monitoring and management; — Means of measuring if on target with expectations; and — Means of managing adverse developments or changes in circumstances. 	<ul style="list-style-type: none"> — measuring if delivery is on target with expectations; and — managing adverse developments or changes in circumstances during deployment and during operations. <p>It is however essential for these mechanism to operate as intended that, in terms of "responsibility for delivery", Government puts in place appropriate structures and resources to effectively implement and manage the NBP contract over its 25 year term. This will be a critical factor for the successful delivery of the NBP intervention.</p> <p>It is important to note that all of our comments on the contract are based on the important assumption that the contract as drafted achieves its intended legal effect. Whether or not it does is a matter for the Department's legal advisers.</p>

10.3 Conclusions and Actions

The following tables set out the conclusions and proposed actions from sections 4-9 of this report.

10.3.1 Conclusions on Network Ownership & Commercial Solution

Table 10.2: Network Ownership & Commercial Solution

Requirements	Findings	Actions
The Bidder's business plan assumptions and corresponding subsidy requirement are appropriate (i.e. appropriateness of costs, revenues and returns).	<p>Overall, in terms of total costs over 25 years, the Bidder's Project Cost Model is [REDACTED] more expensive than the Department's Budget Cost Model (prior to margins and contingency), or [REDACTED] more expensive when margins and contingency are taken into account.</p> <p>At an overall Project Financial Model level, the Bidder has been lower on revenues and higher on costs, and risk items such as margins and contingency when compared to the Department's budget model. These are dealt with in section 5 and 7 of this report.</p> <p>The assumptions applied to the Bidder's Project Financial Model has led to a base Subsidy Payment requirement of [REDACTED] over the 25 year contract period. [REDACTED] In addition, the Bidder has not submitted a Project Financial Model that shows subsidy payments and IRRs for year 10 and year 25 below what was discussed at previous dialogue sessions.</p> <p>While the IRR projected is within benchmarks observed, the Bidder is targeting a return on [REDACTED] by year 1 [REDACTED]</p>	<p>Action (Pre-Contract Award): PGM and PFM Pre Contract Award the Department should confirm with the Bidder that its contract award financial model should reflect that:</p> <ul style="list-style-type: none"> — Total Subsidy Payments DMPs + CMPs + ACMPs cannot exceed the maximums discussed of €1,800m by year 10 and €2,125m by year 25, and — The 10 year nominal blended equity IRR (post SPV tax but pre recipient tax) cannot exceed the maximums discussed of [REDACTED] by year 10 and [REDACTED] by year 25. <p>Action (Pre-Contract Award): Contract – further protection</p> <p>[REDACTED]</p>

Requirements	Findings	Actions
		<p>Action (Pre-Contract Award): Contract – PCM/PFM</p> <p>Require the Bidder to optimise its Project Financial Model to ensure cash balance levels are optimised during the Contract.</p>
		<p>Action (Pre-Contract Award): Contract – further optimisation of the PCM should be explored with the Bidder if appointed Preferred Bidder.</p> <p>The contract, if implemented as intended, provides for the Department to be able to clawback Subsidy Payments during the term of the contract should NBPco outperform its assumptions through Deployment Clawback, IRR Clawback and Terminal Value Clawback. Clawback recommendations are set out in sections 5 and 6.</p>
		<p>Action (Pre-Contract Award): Contract – further protection</p> <p>The assessment of the capacity of each entity to meet its obligations to be updated based on most recent financial information and the most recent structure of NBPco and its various parties in advance of Contract Award.</p> <p>Department to ensure that performance bonds, guarantees and other forms of security as set out in Table 4.1 are provided where they are required from third parties for contractual obligations.</p>

Requirements	Findings	Actions
<ul style="list-style-type: none"> The private sector partner's equity invested should be subject to the risk of: 	<ul style="list-style-type: none"> the network deployment being delayed; or 	<p>Action (Pre-Contract Award): Contract – further protection</p> <p>Clawback actions set out in section 5 and 7.</p>

Requirements	Findings	Actions
	Buildco becomes insolvent (including Direct Agreements with Buildco's subcontractors and the deployment performance bond).	Action (Pre-Contract Award): Contract – further protection Clawback actions set out in section 5 and 7.
The contract is to provide a mechanism which, if implemented appropriately, allows for Government to recoup some of the subsidy paid out if the actual financial performance of NBPco (or Buildco) is better than forecast in the Project Financial Model.	The Department has mechanisms in the contract. If implemented appropriately, in the event that NBPco's financial performance is better than that forecasted in the Bidder's Project Financial Model through Deployment Clawback for NBPco and Buildco, IRR Clawback and Terminal Value Clawback. Further detail on these mechanisms are set out in sections 5 and 7.	Action (Pre-Contract Award): Contract The addendum issued to the Bidder at ISFT sets out the mechanisms and consequence of termination. This is currently being contractualised and should be finalised in advance of Preferred Bidder appointment.
The contract is to provide a mechanism which, if implemented appropriately, allows for Government to take over the network if NBPco fails to deliver the services to the required standard during the contract term, or following the end of the term.	The Department has mechanisms in the contract, if implemented appropriately, to allow for two checkpoints during deployment, a year 10 check for viability and a check at year 25 for continuation of services. These checkpoints provide for the assets or NBPco to revert back to the State in the event that further additional subsidy payments are required to deliver the project as intended in return for a level of compensation that varies depending on the status of the project at that point in time (see section 4.5.2). In addition, the contract as drafted provides the Department with typical protections for failure of NBPco to deliver through termination for NBPco default.	Action (Pre-Contract Award): Contract The Contract includes various governance and reporting mechanisms including reporting for milestones and payments, regular project accounts, accounting separation, performance reporting, change impact assessments for request for additional subsidy or contract changes, a contract liaison board and rules around the governance of NBPco. It will therefore be critical that the Department has the resources it requires to implement the contract and hence ensure that the obligations are being fulfilled.

10.3.2 Conclusions on Network Build

Table 10.3: Network Build

Requirements	Findings	Actions
The Bidder's technical solution meets or exceeds the Department's requirements (but not at an excessive cost) and the Bidder has the technical capacity to deploy the network within the required timescales	<p>Analysisys Mason has reviewed the Bidder's proposed FTTH network design and has concluded that the Bidder's proposed FTTH network design is in line with International best practice and that the network design is correctly reflected in the Bidder's Project Cost Model for both passive and active network elements (section 5.2). Analysisys Mason has confirmed that the active technology proposed by the Bidder⁷² offers four times the download bandwidth and eight times the upload bandwidth of the technology assumed by the Department's Budget Cost Model. Analysisys Mason also concludes that, considering the requirements of the NBP contract, the future demand, other operators' strategies, and the relatively low-cost premium linked with the introduction of the higher capacity technology at the outset of the contract, the technology proposed by the Bidder can be considered as a value for money technology for the NBP.</p> <p>The Bidder has proposed a deployment structure which involves contracting with experienced telecom network contractors for the deployment of the network. The Bidder's deployment plan completes the network build within a 7 year period, however this is highly dependent on the timely completion of the Openair MIP (section 5.2).</p>	<p>Action (Pre-Contract Award): Openair MIP</p> <p>The contract between NBPco and Openair for the MIP is currently in an initial draft form and is to be finalised prior to Contract Award. It should be reviewed by DCCA E for consistency with the NBP contract and for incentives and protections in respect of the timely delivery of the MIP. Bidder to finalise this agreement to the satisfaction of the Department prior to the award of the NBP contract.</p>

⁷² The Bidder has proposed a 150 Mbps product as its main product. This is well in excess of the Department's minimum requirement of 30 Mbps (download speed).

Requirements	Findings	Actions
Deployment risk is appropriately allocated within the NBP contract.	<p>Analysis Mason has concluded that the Bidder has provisioned sufficient resources to deploy the pass network according to its deployment plan and to meet the seven year deployment timeline.</p> <p>The Bidder has stated that [REDACTED] of the deployment obligations will be subcontracted to Buildco.</p>	<p>Action (Pre-Contract Award): Build Contract and Buildco Subcontracts</p> <p>The Build Contract and Buildco Subcontracts are to be completed by the Bidder and reviewed by DCCAE for consistency with the NBP contract. Bidder to finalise these agreements to the satisfaction of the Department prior to the award of the NBP contract.</p> <p>The Build Contract should be clear on how disputes between NBPco and Buildco will be appropriately addressed.</p>
		<p>Action (Pre-Contract Award): Buildco Security Package</p> <p>Buildco security package to be finalised by the Bidder and reviewed by DCCAE for adequacy and consistency with the NBP contract. Bidder to finalise the security package to the satisfaction of the Department prior to the award of the NBP contract.</p> <p>The flow down of risks to Buildco's subcontractors is addressed in the heads of terms for those subcontracts (section 5.2.3).</p>

Requirements	Findings	Actions
	<p>Based on the information assessed, and subject to the actions set out, the deployment risk is appropriately allocated within the NBP Contract.</p>	<p>Analysis Mason's review of the Project Cost Model has identified that:</p> <ul style="list-style-type: none"> — It is important to be cognisant of the differences between the Bidder's Project Cost Model and the Department's Budget Cost Model when comparing the results of the two models, as not all comparisons will be on a like for like basis. — Taking into account these differences, the Bidder's Project Cost Model volume and cost assumptions are appropriate for the Bidder's technical solution and include contingency to cover the deployment risk that NBPco will bear. — However, there are a number of recommended actions flowing from the review of the Project Cost Model: <p>KPMG's further examination of the Bidder's cost, margin and contingency assumptions has also concluded that:</p> <ul style="list-style-type: none"> — The Bidder has included higher cost and lower revenue assumptions in its Project Cost Model, which are driving a higher subsidy requirement. — Mitigation of risk through higher cost assumptions and/or contingency is more consistent with the gap funding model as any unrequired cost / contingency allowances will be subject to clawback. — Any margin included in the cost model is however not subject to clawback and as such is not as appropriate a mechanism
<p>The Bidder's Project Cost Model is appropriate (i.e. the volume and cost assumptions are appropriate for the Bidder's technical solution and include an appropriate level of contingency to cover the deployment risk that NBPco will bear)</p>		

Requirements	Findings	Actions
		Action (Post Contract Award): Governance of Connection Costs
		Action (Pre-Contract Award): Re-categorise Margin as Contingency
		Require the Bidder to re-categorise a proportion of the margin as contingency, such that it will be subject to clawback.
		Action (Pre-Contract Award): Review Definition of Permitted Expenditure

KPMG has identified 6 number of proposed actions in this respect.

Requirements	Findings ⁵	Actions
		<p>Action (Post Contract Award): Governance of Network Build Costs and Connection Costs</p> <p>DCCAE to put in place appropriate resources to examine the capital costs actually incurred by Buildco and its subcontractors so that, in the event that there are savings in the capital costs of the pass network or of connections, DCCAE can recover an appropriate amount of subsidy payments through the deployment clawback and CMP mechanisms in the NBP contract.</p>
		<p>Action (Pre-Contract Award): Subcontractor Labour Rates</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>

Requirements	Findings	Actions
		<p>NBPco and its key subcontractors have the financial capacity to complete the network deployment, taking into account the risk of cost overruns.</p>
		<p>The NBP contractual framework incorporates appropriate safeguards (covering both NBPco and its key subcontractors) to address the requirements of the State Aid Guidelines, the NBP Intervention Strategy and the Public Spending Code, including:</p> <ul style="list-style-type: none"> — Appropriate levels and use of public subsidy; — Full technical and financial transparency in respect of network build; — Appropriate claw back of public subsidy if the permitted expenditure actually incurred during deployment is less than forecast in the Project Cost Model; and <p>NBPco and its key subcontractors have been assessed at the pre-qualification stage to have the financial capacity to complete the network deployment, taking into account the risk of cost overruns. This assessment should be updated in advance of Contract Award and in line with pre-qualification requirements (see section 4).</p> <p>Action (Pre Contract Award): Pre-qualification update See section 4.</p> <p>Action (Post Contract Award): Governance Pre M1 Milestone</p> <p>DCCAЕ to put in place appropriate resources to review the detailed design, updated cost and Design Proposals. Report for each Deployment Area and to follow the appropriate course of action as described in section 5.4.3.4.</p> <p>Action (Post Contract Award): Governance Post M1 Milestone</p> <p>DCCAЕ to put in place appropriate resources to examine the costs actually incurred (by NBPco, Bulidco and its subcontractors) and to calculate the maximum state aid intensity effectively acts as a cap that needs to be checked whenever the ratio of Subsidy Payments to Permitted Expenditure changes. It is therefore important that</p>

Requirements	Findings	Actions
<ul style="list-style-type: none"> — Appropriate governance arrangements to ensure that potential savings in permitted expenditure are identified and are realised by NBPCo (to facilitate claw back). 	<p>Permitted Expenditure is continuously monitored and checked against Subsidy Payments on a regular basis.</p>	<p>Conditional Deployment Subsidy that can be claimed.</p> <p>Action (Pre Contract Award): Deployment Clawback</p> <p>Action (Pre Contract Award): Deployment Clawback</p> <p>Action (Post Contract Award): State Aid Intensity</p> <p>DCCAE to ensure that it continuously monitors the state aid intensity of the Project throughout the 25</p>

Requirements	Findings	Actions
	<p>There are appropriate contractual and financial incentives for NBPco to complete the network deployment within the required timescales. These include the commercial revenues incentive, delay payments, longstop dates, termination events and the performance regime (section 5.4.2).</p>	<p>year contract period against the maximum state aid intensity level stated in the state aid notification.</p>
	<p>The Department has the option (should it so desire) to take-over the deployed network and to complete the network deployment if NBPco is unable or unwilling to complete the network deployment itself.</p>	<p>Action (Pre Contract Award): Asset Handover Conditions</p>

10.3.3 Conclusions on Network Access

Table 10.4: Network Access

Requirements	Findings	Actions
NBPco will have the right to access this existing network infrastructure for at least the term of the NBPco contract (25 years)	Subject to satisfactory completion of the Infrastructure Access Agreements prior to contract award, the IAA provides a contractual provision for NBPco to access the existing network infrastructure that its solution requires for at least the term of the NBPco contract	Action (Pre-Contract Award): Infrastructure Access Agreements IAAs to be completed by the Bidder and reviewed by DCCAE for consistency with the NBP contract (including for the continuation of services after contract expiry). Bidder to finalise its IAAs to the satisfaction of the Department prior to the award of the NBP contract.
The price to be paid for this network access is no more than would otherwise be payable for a commercial network deployment	In advance of submitting its Final Tender, the Bidder received from [REDACTED] its Infrastructure access pricing which is [REDACTED]	Provided the contractual provisions described in the report are included in the final NBP contract and the Department maintains appropriate governance arrangements in respect of the contract, the price to be paid for network access should be no more than would otherwise be payable for a commercial network deployment.
There are appropriate contractual or regulatory controls in respect of changes in the network	As stated above, there should be appropriate contract and/or regulatory controls in respect of changes in the network access	Action: Liaison with ComReg Department to agree an appropriate mechanism with ComReg which will provide for the Department

Requirements	Findings	Actions
access charges during the 25 year contract term.	<p>charges during the 25 year contract term (assuming that eir's products are regulated throughout the contract term).</p> <p>Nevertheless, given the important role that the regulator, ComReg, plays in the setting of eir's infrastructure access prices, and the impact that such prices can have on the subsidy that is payable by Government, it will be essential for the Department to maintain a close working relationship with ComReg in order to ensure the specific circumstances of the NBP state-led intervention are taken into account in any future consideration of the regulatory framework governing access to eir's infrastructure whilst preserving the independence of the regulator.</p>	to be consulted on regulatory matters that impact on the NBP state-led intervention, whilst preserving the independence of the regulator.

10.3.4 Conclusions on Network Operations

Table 10.6: Network Operations

Requirements	Findings	Actions
The Bidder has the technical capacity to operate the network	<p>Analysis Mason and the Department's operational evaluation team have indicated that the Bidder and its key subcontractors have the technical capacity to operate the network</p> <p>All infrastructure access providers and subcontractors named as part of the Bidder's operations are experienced telecom network contractors and were assessed for financial standing and professional and technical capability (as applicable) at prequalification stage.</p>	
Operating risk is appropriately allocated within the NBP contract		NBPco is allocating operating risk through its infrastructure access and subcontract agreements. Whilst the terms of these agreements are still to be finalised, the subcontractors will seek to roll down to infrastructure access providers and subcontractors

Requirements	Findings	Actions
	<p>relevant NBP contract terms, including operating cost and performance risk, for services they are contracted to provide (subject to Post Build Contract Assumptions).</p> <p>The contract provides for NBPCo to be responsible for the operating cost and performance risk associated with the services it provides, as well as being responsible for "wrapping" the Infrastructure access agreements and subcontracts in order to deliver the full service requirements over the 25 year contract period for the price committed to in the Project Cost Model (subject to Contract Assumptions).</p> <p>Operating risk is therefore appropriately allocated within the NBP contract.</p>	<p>Action (Pre-Contract Award): OSSBSS Change Requests</p> <p>[REDACTED]</p> <p>Action (Pre-Contract Award): Insurance Clawback</p> <p>[REDACTED]</p>
	<p>The Bidder's Project Cost Model operating cost assumptions are appropriate for the Bidder's technical solution and include an appropriate level of contingency to cover the operational risk that NBPCo will bear. However, if pole and duct rental costs are excluded from the operating costs comparison, it is evident that in relation to all other categories of operating cost, the aggregate difference between the Bidder's PCM and the Department's Budget Model is [REDACTED]. There is a small number of main items that contribute to this difference, in particular:</p>	<p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>

In addition, Marsh has recommended that the Bidder provides the broking slips provided to the

Requirements	Findings	Actions
	<p>We believe that NBPco managed operations should be included within the Department's right to benchmark operations during the contract period.</p>	<p>markets in order to obtain quotes so the Department can check that a fair and accurate representation of risk has been provided to insurers. This provides an opportunity to review other policy terms, conditions, warranties and exclusions etc.</p> <p>Action (Pre-Contract Award): Operating subcontracts and contingencies</p> <p>The operating subcontracts are to be completed by the Bidder and reviewed by DCCAE for consistency with the NBP contract. Bidder to finalise these agreements to the satisfaction of the Department prior to the award of the NBP contract.</p> <p>[REDACTED]</p> <p>Action (Pre-Contract Award): Benchmarking of Operations</p> <p>[REDACTED]</p>
	<p>NBPco and its key subcontractors have the financial capacity to maintain and operate the network, taking into account the risk of cost overruns. This</p>	<p>Action (Pre-Contract Award): Financial Standing</p>

Requirements	Findings	Actions
network, taking into account the risk of cost overruns	<p>Assessment should be updated based on each entities' most recent financial information in advance of contract award.</p>	<p>Action (Pre-Contract Award): IRR Clawback</p> <p>Assessment of financial standing to be repeated prior to contract award. In order to confirm that each of the Bidder's key subcontractor's has the financial standing necessary to deliver its role on the Project. This action should apply to both deployment and operations.</p>
	<p>The NBP contractual framework incorporates appropriate safeguards (covering both NBPPco and its key subcontractors) to address State Aid Guidelines, the NBP Intervention Strategy and the Public Spending Code (as listed in first column) for network operation.</p> <p>To ensure that the Contract safeguards operate as intended it will be important for the Department to have an appropriately resourced and skilled team to implement the contractual provisions in this regard. We have set out specific actions for post contract governance to address this.</p>	<p>Action (Pre-Contract Award): IRR Clawback</p> <p>The NBP contractual framework incorporates safeguards (covering both NBPPco and its key subcontractors) to address State Aid Guidelines, the NBP Intervention Strategy and the Public Spending Code (as listed in first column) for network operation.</p> <p>To ensure that the Contract safeguards operate as intended it will be important for the Department to have an appropriately resourced and skilled team to implement the contractual provisions in this regard. We have set out specific actions for post contract governance to address this.</p>
	<p>The NBP contractual framework incorporates appropriate safeguards (covering both NBPPco and its key subcontractors) to address State Aid Guidelines, the NBP Intervention Strategy and the Public Spending Code (as listed in first column) for network operation.</p> <p>To ensure that the Contract safeguards operate as intended it will be important for the Department to have an appropriately resourced and skilled team to implement the contractual provisions in this regard. We have set out specific actions for post contract governance to address this.</p>	<p>Action (Post-Contract Award): Demand Stimulation</p> <p>There are appropriate contractual and financial incentives for NBPPco to maintain the network and achieve the required service levels throughout the contract period. These include the</p>

Requirements	Findings	Actions
and achieve the required service levels throughout the contract period.	<p>commercial revenues incentive, performance credits, the viability checkpoint at year 10 and termination events (section 7.5.2).</p> <p>The Bidder's total revenue over 25 years is [REDACTED] lower than the Department's estimate, which is due to the Bidder's assuming a lower addressable base of customers at the start of the project, a take-up (demand) curve that is substantially shallower than the Department's estimate, taking much longer to reach its peak take-up rate [REDACTED]</p> <p>The Bidder's slower take-up growth rate assumption is however consistent with the lessons learned on the 2008 National Broadband Scheme (section 3.4), on which both the Bidder and the Department over-estimated take-up.</p>	<p>We recommend that the Department's contract implementation and governance team is proactive in its monitoring of NBPCo's demand stimulation activities, receiving monthly reports on progress, activities undertaken and planned marketing activity. The Department might also consider opportunities to support the stimulation of take-up in the intervention area.</p>
	<p>The Department has the right (should it so desire) to take-over and operate the network if NBPCo is unable or unwilling to operate the network in accordance with the contract.</p>	<p>The contract, if implemented appropriately, provides the ability for Department to take-over and operate the network if NBPCo is unable or unwilling to operate the network in accordance with the contract. This is possible at the viability checkpoint at year 10 and year 25 and also through termination for NBPCo default at any time during operations (see section 4 and section 7.5.2).</p>

10.3.5 Conclusions on Governance

Table 10.7: Governance

Requirements	Findings	Actions
NBP Co is adhering to best practice in terms of Corporate Governance appropriate for level of State Investment in the project	<p>The key corporate governance requirements under the Contract are set out in Schedule 2.7 (NBPco Requirements). It is a precondition to the award of the Contract that the Bidder has evidenced to the satisfaction of the Department that the corporate governance of NBPco is in accordance with Schedule 2.7.</p> <p>Subject to satisfactory review of the Constitution, Shareholders Agreement and Governance Protocol prior to contract award, NBPco should have corporate governance arrangements in place in line with the NBP contract requirements (in particular Schedule 2.7).</p> <p>These provisions are broadly in line with / comparable (where appropriate to the Code of Best Practice for the Governance of State Bodies, August 2016 (and supplemental guidance) ('the Code'), noting however that NBPco is not a State Body. KPMG has identified a number of actions in which further improvements might be sought.</p> <p>In addition, as the Bidder's solution places a significant level of responsibility for the delivery of the network with BuildCo, a key subcontractor of NBPco, this means that BuildCo will, on a day to day basis, manage the investment of public subsidy in the deployment of the broadband network and it will be through BuildCo that the main deployment clawback will flow (see section 5.4).</p> <p>Accordingly, we believe the Department should require similar levels of corporate governance, oversight and transparency in</p>	<p>Action (Pre-Contract Award): Additional Network Governance Contract Provisions (examples)</p> <p>Flow down of key governance provisions to key subcontractors (in particular BuildCo, e.g. potential for Minister's Appointee at BuildCo level).</p> <p>General contractual provision that NBPco and BuildCo (and their boards) should operate in a manner consistent with best practice in corporate governance.</p> <p>NBPco to provide all necessary information and support to the Department to allow it to comply with the Department's own reporting and oversight obligations (in addition to rights of audit).</p> <p>Action (Pre-Contract Award): Governance and oversight of BuildCo</p> <p>Department should require similar levels of corporate governance and oversight in respect of</p>

Requirements	Findings	Actions
	<p>Government has appropriate levels of oversight over NBP Co given the level of State investment in the project</p> <p>The NBP contract imposes numerous obligations on NBPco to report to, consult with and seek approval from the Department during deployment and operations. The contract also provides the Department with a range of contractual mechanisms and protections to, if implemented appropriately, robustly manage the delivery of the Project (from State's perspective).</p> <p>To ensure that the Contract safeguards operate as intended it will be important for the Department to have an appropriately resourced and skilled team to implement the contractual provisions in this regard. We have set out specific actions for post contract governance to address this.</p> <p>The Department is currently considering the establishment of a special purpose unit / entity to implement the contract after award. This special purpose unit, or an appropriate interim solution, will need to be put in place prior to contract award.</p>	<p>Buildco to those it requires of NBPco. This should include a Minister appointee on the board of Buildco.</p> <p>Provided that our recommendations are satisfactorily addressed and that the contract is operated as intended, it should provide Governance arrangements that are in line with best practice for a project of this nature.</p> <p>Action (Pre-Contract Award): Department Oversight</p> <p>DCCAE to finalise its proposals in relation to the establishment of a special purpose unit / entity to oversee the contract. This special purpose unit, or an appropriate interim solution, will need to be put in place prior to contract award.</p>

10.3.6 Conclusions on Solution Quality

Table 10.8: Solution Quality

Requirements	Findings	Actions
The Bidder's Solution is complete, compliant and robust, as defined by the evaluation methodology	Stage 1 of the separate final tender evaluation found the Bidder's Solution to be complete, compliant and robust. The scope of the compliance and robustness assessments is set out in section 9.2.	
The Bidder's Solution is of a sufficient quality, as determined by scores awarded and the achievement of the minimum score thresholds	The separate final tender evaluation found that Bidder's solution is of sufficient quality, as shown by the results of the technical and commercial evaluation. The Bidder's solution exceeded the minimum score thresholds in every case.	
Any areas in which the Solution does not fully satisfy the Department's requirements have been identified by the evaluation teams so that they can be addressed prior to contract award	Whilst conducting the final tender evaluation, the evaluation teams have identified any areas in which the Bidder's Solution does not fully satisfy the Department's requirements so that they can be addressed prior to contract award	



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A Network Build Volumes by Network Segment

Figure 5: Network volumes for pass network

Solution element	Bidder Total	DCCAE Benchmark Total	Bidder New / Built	DCCAE Benchmark New / Built
Total Network length (km)				
Total UG network length (km)				
UG network in Excluded Area				
UG network in IA				
Total OH network length (km)				
OH network in Excluded Area				
OH network in IA				
Total # of poles				
# of poles in Excluded Area				
# of poles in IA				

Figure 6: Network volumes for connect network

Solution element	Bidder Total	DCCAE Benchmark Total	Bidder New / Built	DCCAE Benchmark New / Built
Total Network length (km)				
Total UG network length (km)				
UG network in Excluded Area				
UG network in IA				
Total OH network length (km)				
OH network in Excluded Area				
OH network in IA				
Total # of poles				
# of poles in Excluded Area				
# of poles in IA				



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